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This study was conducted to determine if there was a difference between the recommended number and distribution of Allied Health Professional resource allocations (Occupational Therapists, Physical Therapists, Speech Pathologists, and Audiologists) determined using population based estimates and the recommended number and distribution based on market analysis procedures coupled with professional organization statistics. A significant difference was found between the two methods. The population based system was found to be the optimum system. The population based system required a substantial increase in the numbers of professionals. The increase is impractical based on budget limitations. The author recommended distribution of available assets based on areas of greatest need.

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The Use of Market Analysis
in Determining Resource Allocations
for the Exceptional Family Member Program in USAREUR
Landstuhl Army Regional Medical Center
Landstuhl, Germany

A GRADUATE RESEARCH PROJECT

Submitted to the Faculty of

Baylor University

In Partial Fulfillment of the

Requirements for the Degree

of

Master of Health Administration

by

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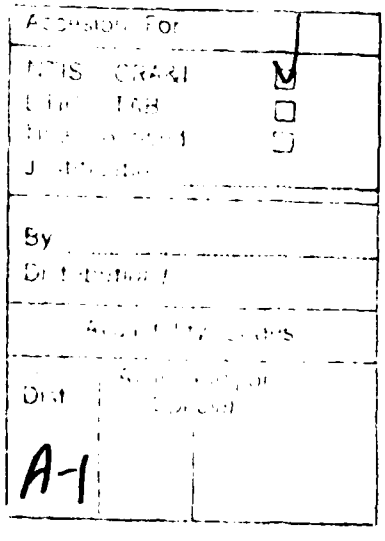

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CHAPTER I

INTRODUCTION

Public Law 94-142, the "Education for All Handicapped Children Act" passed on November 29, 1975 and went into effect in October 1977.[1] This law guarantees a free and appropriate public education to all handicapped children. Free is interpreted as being at no direct monetary cost to the parents or guardians of the involved child. The appropriateness is based upon an educational (and medical when indicated) interdisciplinary evaluation of the child and establishment of an Individualized Education Program (IEP) for the child.[2] Handicapped children are identified as including "mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed, orthopedically impaired or other health impaired children who by reason thereof, require special education and related services."[3]

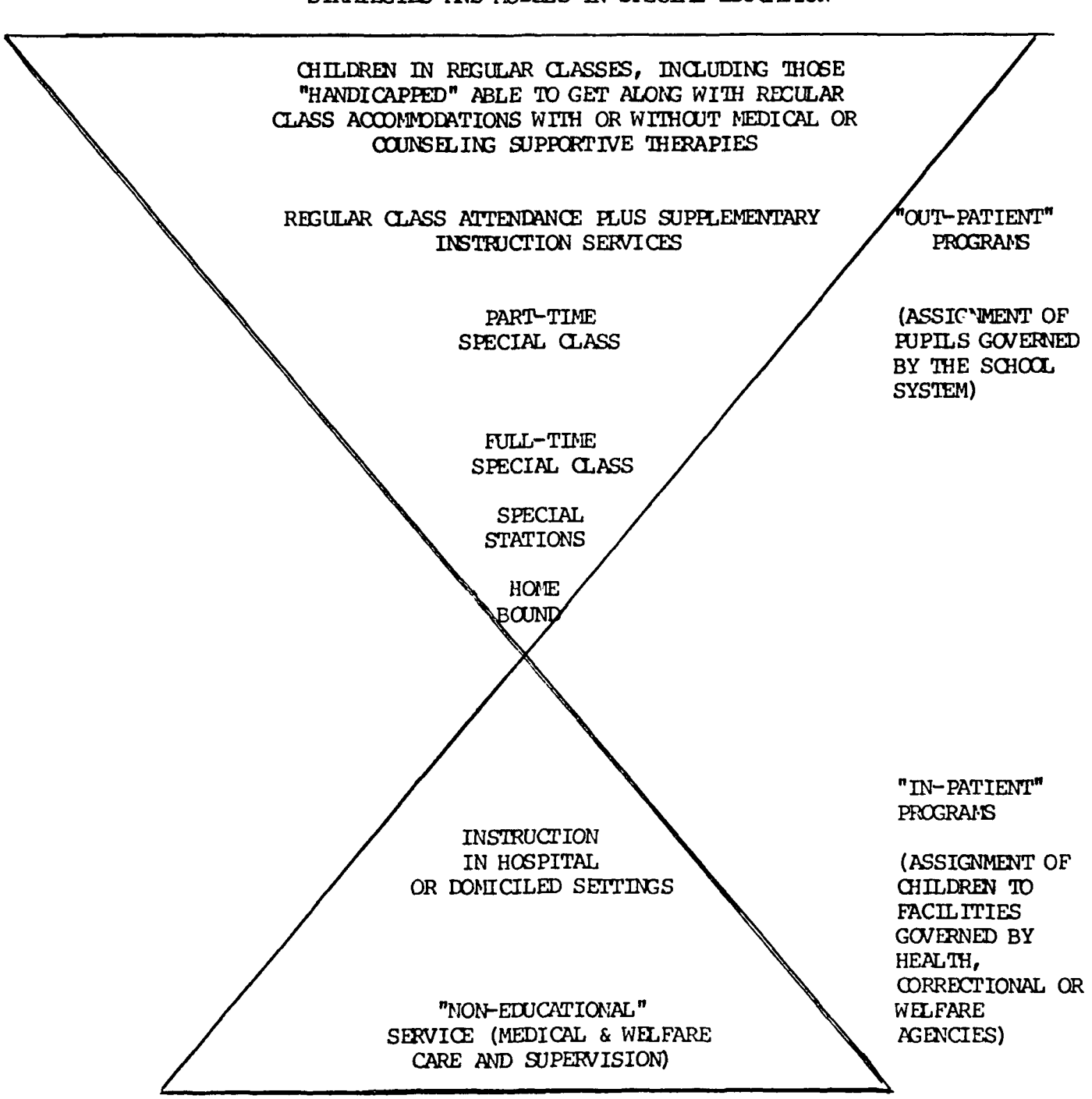
Historically, handicapped individuals have not obtained effective education and were not considered as potentially capable, productive members of society.[4] In 1974-1975, 1.75 million of 8.7 million handicapped children were not receiving any educational services, while 2.5 million (of those receiving an education) were not receiving an appropriate education.[5] During the 1960's, research began to reveal that disabled children could benefit from education and that handicapped adults could live productive lives outside traditional institutional settings.[6]

Two cases were particular forerunners of PL 94-142; The Pennsylvania Association for Retarded Children vs. Pennsylvania and Mills vs. the Board of Education. The former guaranteed the right to education for mentally retarded children and the latter concluded that all handicapped children had the right to education, even if funds were limited.[7] These two cases were followed by Public Law 93-380, "Right to Education Amendments Act of 1974" which was expanded by PL 94-142.[8]

The purpose of PL 94-142 is "to assure that all handicapped children have available to them, within the time periods specified, a free appropriate public education which emphasizes special education and related services designed to meet their unique needs, to assure that the rights of the handicapped children and their parents or guardians are protected, to assist states and localities to provide for the education of all handicapped children, and to assess and assure the effectiveness of efforts to educate handicapped children."[9] 'Related services' includes "speech pathology and audiology, psychological services, physical and occupational therapy, recreation, and medical and counseling services..."[10] PL 94-142 also attempts to include early identification, diagnosis and treatment (for children from ages 3-21, with handicapping conditions in order to assure the greatest potential benefit from the educational services.

In the model on the following page (figure 1), it is noted that prior to PL 94-142, the top three levels were relatively nonexistent for handicapped children. Education in the other areas was often

Figure 1. The Cascade System of Special Education Services



THE TAPERED DESIGN IS USED IN THE CHART TO INDICATE THE CONSIDERABLE DIFFERENCE IN THE NUMBERS INVOLVED AT THE DIFFERENT LEVELS AND CALL ATTENTION TO THE FACT THAT THE SYSTEM SERVES AS A DIAGNOSTIC FILTER. THE MOST SPECIALIZED FACILITIES ARE LIKELY TO BE NEEDED BY THE FEWEST CHILDREN ON A LONG-TERM BASIS. THIS ORGANIZATION MODEL CAN BE APPLIED TO DEVELOPMENT OF SPECIAL EDUCATION SERVICES FOR ALL TYPES OF DISABILITY.

inappropriate, consisting of maintenance rather than education and provided by individuals without comprehensive training and without a team approach.[11]

PL 44-142 was primarily directed as state provision of education. The education of handicapped dependents of active military personnel stationed overseas was not addressed until initiation of Public Law 95-561. PL 95-561, "Defense Dependent's Education Act of 1978", along with Department of Defense (DOD) Directive 1342.6 "Department of Defense Public Schools" 1978, have warranted military involvement.

Public Law 95-561, "Defense Dependent's Education Act of 1978," required that all military dependents overseas be guaranteed the same rights as children in the United States under PL 94-142. According to DOD Directive 1342.12, "Education of Handicapped Children in the DOD Dependents Schools," "The Secretaries of the Military Departments shall provide those related services that are provided by a physician or that require professional medical supervision. In general, those services, which are diagnostic and therapeutic in nature, shall be provided to Department of Defense Public Schools (DODs) by the appropriate military command having responsibility for medical care in the geographic region. The services include medical services for diagnostic and evaluative purposes, occupational therapy, physical therapy, and audiology..."[12] Thus, the geographic regions will be supplied in accordance with the military command in that area.

Preparation for assumption of this role began in a triphasic manner. First, a research study was done in Europe to determine the number of children requiring services. Second, an AMEDD Steering Committee was developed for screening, assessment, diagnosis and coding of the health and educational requirements of handicapped dependent children. This was tested at Madigan Army Medical Center and Moncrief Army Community Hospital.[13] The third phase included development of a core team to be located in Frankfurt to begin implementation and monitoring of the program on a small scale (Frankfurt, Landstuhl, Heidelberg, Nuernberg and Stuttgart). In accordance with PL 94-142 and 95-561 and DOD Directive 1342.12, the Office of the Surgeon General assigned a team to 7th Medical Command (MEDCOM) to assist the Medical Department Activity/Medical Centers (MEDDAC/MEDCENs) in implementating the Exceptional Family Member Program.

The implications of the initiation of this program in Europe directly follow those described in the macro perspective of fulfilling expectations of PL 94-142. Supply of services and practitioners must be increased to fulfill this newly directed mission. The 7th Medical Command consultation team has been involved in recommending resource allocations for the various geographic areas. Personnel allocations to date were based on an estimated total number of military children per locale. Research reveals that in a normally distributed population, 8.6% of the children will require mental health care, 3% will require professional psychiatric care and 12% will have some degree of physical/neurological impairment (Appendix B).[14] Thus, estimates of

the number of handicapped children was obtained and ranked according to the size of each Army community. The number of allied health professionals, per area, was allocated by giving the greater number of professionals to the areas with the greater estimated number of handicapped children.

No estimates exist which give the recommended number of allied health professionls per total population or handicapped population. Therefore, recommendations were based on total estimates without precise knowledge of the number of handicapped children, the handicapping conditions, the severity of the handicaps or the types of professionals required for diagnostic and therapeutic services for the existing handicapped population. Initiation of new programs often begin without the background infor ation which could assist in such decision making processes.

The MEDDAC/MEDCEN's within 7th MEDCOM have begun to receive military and civilian professional personnel for the Exceptional Family Member Program (EFMP). Future assignments will continue though fiscal year 1985. Civilian hiring actions were initiated as of 1 October 1983.[15] Department of the Army Civilian assignments to outlying medical treatment facilities are expected to continue through fiscal year 1985/1986.[16] Location and composition of each Exceptional Family Member Department has been established with targeted arrival dates (Appendix C).[17]

The consultant team from 7th MEDCOM retains the responsibility for providing recommendations regarding personnel resource allocations. Marketing analysis could provide valuable information which may result in alternative recommendations other than those made initially.

Marketing in health care is a relatively new concept, which is defined as "the analysis, planning, implementation, and control of carefully formulated programs designed to bring about voluntary exchanges of values with target markets for the purpose of achieving organizational objectives."[18] The purpose of this study is to determine whether different conclusions about the number of handicapped children per locale and type and/or number of professionals required for the diagnosis and treatment of these children can be drawn as the result of a market analysis.

A market analysis involves the assessment and analysis phases of the planning cycle. The information obtained is then utilized in formulation of the program design so that the implementation phase can have the highest chance for success.

Statement of the Problem

The problem is to determine if there is a difference between the recommended number and distribution of Allied Health Professional resource allocations (Occupational Therapists, Physical Therapists, Speech Pathologists and Audiologists) previously determined utilizing population based estimates and the recommended number and distribution of Allied Health Professional resource allocations based on market analysis procedures coupled with professional organization statistics.

Purpose

The purpose of this research is:

1. To determine if market analysis is viably applicable for manpower allocation and assignment in program development.

2. To provide information in order to assist in the decision making process of allied health professional personnel resource allocations in USAREUR for the Exceptional Family Member Program.

3. To determine the optimal method to be utilized for manpower allocation and assignment in the development of new programs.

Objectives

1. Submit research proposal to:
   a. Col. Milton P. Kale, Medical Representative and Director of the Exceptional Family Member Consultant Team, 7th Medical Command.
   b. DOD Educational Program Coordinator, Mr. Mayland Porter, for evaluation, revision and permission to conduct research.

2. Review and analyze the demographic method utilized by the Exceptional Family Member planing staff to arrive at their conclusions for:
   a. The number of Army dependent school age children in Germany, Shape and Vincenza.
   b. The number of allied health professionals (Occupational Therapy, Physical Therapy, Audiology and Speech Pathology) allocated to each geographic locale in Germany, at Shape and Vincenza.

3. Obtain data from each national professional organization for Occupational Therapy, Physical Therapy, Audiology and Speech Pathology to determine:

a. If the professional organization has developed recommended standards for number of professionals per capita for well and/or patient populations.

b. The average number of different patients treated per day for each profession.

4. Obtain DOD Special Education census information by region, to include data on the school age children with Individualized Educational Programs (IEP's) and requirements for allied health profesionals.

5. Administer survey (in interview format) to the director and/or a representative from each Exceptional Family Member Department in Germany, Shape, and Vincenza.

6. Evaluate and examine market analysis alternatives for deriving professional resource allocation recommendations:

a. DOD Special Education census information on the number of children having Individualized Educational Programs in conjunction with national professional statistics of the number of different patients treated per month per allied health profession.

b. Population percentiles recommended by Seventh Medical Command EFMP consultant staff, estimating the number of

handicapped children, in conjunction with national professional statistics of number of different patients treated per month per allied health profession.

c. Exceptional Family Member Departmental estimates on patient population when the department is fully operational in conjunction with national professional statistics of the number of different patients treated per month per allied health profession.

d. Projective estimates utilizing current patient population plus the number of new referrals per month in conjunction with national professional statistics of the number of different patients treated per month per allied health profession.

7. Review the school age population statistics for the areas of responsibility for each Exceptional Family Member Department (EFMD).

8. Calculate the total number of children ages 0 - 17, for the area of responsibility for each EFMD, and determine the number of required allied health professional personnel for the four market analysis alternatives.

9. Utilizing the Churchman-Ackoff Analysis Technique, determine the optimal feasible method of resource allocation.

10. Report results, conclusions and recommendations.

Criteria

1. The allied health professionals surveyed must be actively involved in the Exceptional Family Member Program.

2. Speech Pathologists, Audiologists, Physical and Occupational Therapists must conform to their national professional organizations educational requirements (MS and/or BS levels).

3. Obtain interview data from one hundred percent of the Exceptional Family Member Departments.

Assumptions

1. The Individualized Educational Programs identified by each school are representative of the number of educationally handicapped children in their school.

2. The incidence of handicapping conditions in the military is similar to that of the United States civilian community.

3. The number of units of care that EFMP allied health professionals provide to a child with a particular condition, seen in a particular setting, is similar to the United States civilian counterpart.

4. The average productivity of allied health professionals is similar to the United States civilian counterpart.

5. The percentage of the total Exceptional Family Member patient population seen by each of the allied health professionals at Frankfurt and Landstuhl is representative of the percentages in other Exceptional Family Member Departments.

6. Population percentiles are representative of the true number of handicapped children.

Limitations

1. Survey responses may be subject to over rating and/or under rating based on the personal experience and knowledge of the respondant.

2. Children under school age may not be adequately identified by the procedure used and may lead to inaccurate conclusions.

3. The identified number of handicapped children in USAREUR may be skewed downward secondary to the previous trend of active duty parents and/or guardians embarking on an unaccompanied tour. The handicapped child frequently remained in the United States to receive medical and/or educational services, thus the full impact of personnel beginning to utilize this program may not be indicated.

4. National statistics of the number of different patients treated per month by each specified allied health profession are based primarily on civilian populations. Military needs may be substantially different. (i.e., The number and severity of handicapped children within the military setting may differ, as parents/guardians may elect active duty status in order to obtain medical care for their child.)

5. Population statistics are static where populations themselves are dynamic. Therefore, results may not be able to be duplicated as they are a measure of a specific situation and time frame.

Review and Analysis

Initial Personnel Assignment

The concept and organization of a program such as the Exceptional Family Member Program is new. Attempts to identify the number of children needing services was made utilizing approximations of the children in each locale and statistics on handicapping conditions (Appendix B). The population figures used were estimates. No data on the number of professional personnel which would be needed was available.

Manpower allocations were based on professional estimates with no precise research basis. Documentation of workload data was encouraged for each Exceptional Family Member Department in order to substantiate

personnel assignments and to assist in future allocations.

In Military Medicine, February, 1983, the number of mental health resources required for treatment of military dependent children was identified.[20] This assessment did not specifically address regional areas of the Exceptional Family Member Program, but did identify areas of need both in the continental United States and overseas.

The Exceptional Family Member Program was mandated in response to primarily latent consumer needs. The product was emphasized by supplying the professional staff and services prior to identification of specific consumer needs.

Marketing literature suggests various techniques such as record audits, attitude and need surveys and interviews of key personnel to determine market needs, wants and demands.[21] The political demand for this program required rapid development which pre-empted early market analysis. Of the "four P's" of marketing, place was established by location of the Exceptional Family Member Departments. The product was established as a result of Public Law 94-142 and DOD Directive 1342.12, "Education of Handicapped Children in the DoD Dependents Schools" in their definition of related services. The price was established by the availability of services in regard to proximity to the patients home. Promotion is currently being encouraged through the schools and through media such as radio and newspapers.

Marketing research suggests identifying target markets for analysis. The markets are not restricted to patients but include health care providers, potential patients and referral sources. This study will attempt to use information from providers, referral sources

(i.e. schools), current patient data and epidemiological statistics available from the schools.

Research Methodology

Review and Analysis

Market Analysis Alternatives - Alternative A

Department of Defense Special Education census information in conjunction with professional organization statistics.

The American Speech-Language-Hearing Association (ASHA) published their census results in March 1983.[22] The overall response rate was seventy four (74) percent. Provided that response bias is minimal, an estimated proportion based on a sample this size will be within three percent of the true proportion, ninety five (95) percent of the time.[23] The ASHA did not provide a recommended number of professionals per patient population. A recommended number of professionals based on community population size was also not provided. The average patient caseload was reported.

For Speech Pathologists, the total of different patients seen per month was fourty four (44). In school settings, the mean number of patients was reported as fifty one and three tenths (51.3). The mean number of different clients seen by audiologists was one hundred two (102) overall and eighty five and seven tenths (85.7) in school settings. [24]

The American Physical Therapy Association (APTA) published their statistical survey summary "Active Member Profile - 1982", which can be requested from the national association. [25] Twenty (20) percent of the total active membership was surveyed with a sixty three (63) percent return rate. The mean number of patients seen by full time Physical Therapists was seven (7.09). In school settings the mean number of patients was reported as eight and three tenths (8.31). [26]

The American Occupational Therapy Association provides statistical information on request. Full time Occupational Therapists see an mean average of eight and three tenths (8.3) patients per day. Occupational Therapists also see patients in group settings when appropriate. The mean number of patients per group was reported as six and two tenths (6.2) and the average time per session was fifty four minutes (54). Sixty nine (69.3) percent of an Occupational Therapists time is spent in direct patient care. This equates to approximately five hours and fifty four minutes of direct patient care per day. [27] In order to accurately present the Occupational Therapists caseload in this study, three figures are utilized.

The first represents the number of different individual patients which are seen per month. The second is a combination representing individual patients and one group treatment session per day. The third represents individual patients and two group sessions (see Appendix D and E). All of these are based on approximately sixty nine (69) percent of the Occupational Therapists day being spent in direct patient care.

Also, although eight patients are seen per day, individual patients are typically seen two to three times per week (in both Physical and Occupational Therapy). This means that only twenty (20.75) different children can be seen per week. Patients are continued in rehabilitative treatment from ranges as wide as one month, several years, or a lifetime maintenance program. Patients often must wait for an opening in the therapists treatment schedule in order to receive direct patient care. Therefore, to assume that a therapist could see eighty three different patients per week (20.75 patients per week x 4 weeks = 83 patients per month) is inaccurate. It is more likely that a therapist will see the same patients each week, for either two or three sessions apiece. New referrals are seen in time frames set aside for that purpose. The number of different patients seen per month reflects this regime.

The estimates of the number of children needing related services may not apply equally to each of the allied health professionals. For example, if the number of Individualized Educational Program's for Wuerzberg is four hundred eleven (411), not all of those children will need Speech, Audiology, Occupational and Physical Therapy services. Therefore, three estimates will be used. The number of professionals required if half of the patients or one fourth of the patients need a service comprise the first two categories. The third category will be profession specific.

By examining patient count statistics for Landstuhl Army Regional Medical Center and Frankfurt Army Regional Medical Center (EFMD statistics) the percentage of the total patient population seen by each

profession can be calculated (Appendix F). For example, seventy nine percent (79%) of the patients seen in the Frankfurt EFMD are seen by Occupational Therapy. Fifty nine percent (59%) of the EFMD patients at Landstuhl are seen by Occupational Therapy. Both percentages are calculated to display the number of professionals needed if those percentages were accurate for all EFMD's. As previously stated, percentages based on need of related services in one half and one fourth of the cases are also noted (Appendix G).

The number of different patients treated per month per allied health profession is used in each of the marketing alternatives. If the professional organization had differing statistics for the overall mean number of different patients seen per month and the mean number of different patients seen per month in a school setting, both are represented.

In analyzing the use of national statistics, the positive aspects include the utilization of comparative professional statistics. This provides some guidance on the number and type of professionals needed. Using estimates of the total number of patients seen per profession, derived from Landstuhl and Frankfurt statistics, yields previously unknown information which can assist with caseload predictions for other areas. Negative aspects question the comparison of civilian and military programs, continental United States and overseas settings and statistics based on distinctly different programs. Use of statistics based on the need for services one half or one fourth of the time is arbitrary. Use of statistical percentages based on Landstuhl and Frankfurt EFMD's assumes similar conditions in other EFMD's. In

conclusion, the number of different patients treated per month per allied health profession are analyzed with a) both school and general national statistics, b) at twenty five (25) percent, fifty (50) percent and the Landstuhl and Frankfurt percentages of use and c) for three types of Occupational Therapy treatment regimes.

The Department of Defense Schools Special Education Census is completed by each school (Appendix H). The number of children with Individualized Educational Programs (IEP's) is identified and characterized by class placement, grade level, sex and related services. [28] Public Law 94-142 requires diagnosis and treatment of handicapping conditions in order to assume the greatest potential educational benefit for the child. Although not all children with IEP's will require allied health professional intervention, the identification of these children by their teacher could be indicative of the number of children requiring evaluation and/or treatment in the Exceptional Family Member Program.

The question of teacher identification of students with special needs which include allied health services is under debate. Many educators feel that since the IEP and the EFMP are designed to assist those students who are educationally handicapped, that teachers are well qualified. Identification of the precise medical discipline which will benefit the child may not be within the teachers realm, however. On the other side of the debate, teachers may miss children whose handicap is not manifested in educational terms. A child with central nervous system processing difficulties may appear easily distractable,

as a behavior problem or awkward and clumsy. These children may only be identified through professional screening or further education of the teachers on observable characteristics.

The number of IEP's identified by each school often had internal conflict between the number identified in the first section, class placement, and that in the third section, grade level. After speaking with the Department of Defense schools regional office in Wiesbaden, it was decided the lower of the two figures should be used. This would assist in preventing over inflation of the number of IEP's. The reason for the discrepancy was not identified.

The positive aspects of using the school identified children with IEP's includes the teachers spending more time with the child and thus having greater chance to observe the child. The number of children per school are already identified and the researcher has only to compile the statistics per Exceptinoal Family Member Department regional responsibility. (This had not been done previsouly and the various departments questioned the schools for which they were responsible.) Using this method could also increase cooperativeness between the school system and the Exceptional Family Member Program staff.

The negative aspects include the debate over the teachers ability to adequately identify children with special needs. It also may not include all children from birth to five years of age. Some children are enrolled in pre-school and will be identified; but pre-school attendance is not mandatory.

Market Analysis - Alternative B

Population percentiles estimating the number of handicapped children in conjunction with national professional statistics of number of different patients treated per month.

The Seventh Medical Command Exceptional Family Member Program (EFMP) staff has advised the Exceptional Family Member Departments (EFMD) at each locale to estimate the expected number of patients based on population. The figure which has been recommended is ten percent of the total population, ages 0 - 21. The ten percent is a figure chosen to represent the number of handicapped children based on epidemiological research (Appendix I).

According to epidemiological research, in a normally distributed population, eight and six tenths percent of all children (8.6%) will require mental health care. [29] Three percent (3%) will require professional psychiatric care. [30] Twelve percent (12%) will have physical and/or neurological impairments. [31] Ten to thirty percent (10% - 30%) will have learning impairments. [32] Nine tenths percent (9/10%) will be educable and/or trainable mentally retarded. [33] Seven to ten percent (7% - 10%) will be speech impaired. [34] Ten percent (10%) will have a reading disability [35] and four to ten percent (4% - 10%) will display evidence of hyperactivity and decreased attention span. [36] More statistics are available for children with genetically inherited dysfunctions, drug and alcohol problems, parental abuse, etc. The total of these statistics (using the low number for those with a stated range) translates to approximately fifty percent of the total population.

Children identified in one category may also be included in a second or even third category. The ten percent figure recommended by Seventh Medical Command is an estimation based on statistics such as those listed. In interviews with Colonel Milton P. Kale, MC, Medical Representative and Director of the Exceptional Family Member Consultant Team, Seventh Medical Command and Captain Pat Patterson, MSC, Social Work Service, Exceptional Family Member Department, Heidelberg, the ten percent figure is proving to be an accurate estimation.

The number of school age children was identified through the Department of Defense schools actual enrollment report, as of 30 April 1984 (Appendix J). This data represents children between the ages of five (5) and seventeen (17). According to extrapolations from the U.S. Census Bureau, this constitutes approximately seventy five percent of the population from zero (0) to seventeen (17) years of age. [27] Therefore, adjustments to account for children below five (5) years of age were made. No estimation for the seventeen (17) to twenty one (21) year old age range was made. It could be assumed that this number is under represented, as military dependents, in foreign countries. [28]

The assets of using this evaluative procedure include the reported success of the ten percent (10%) estimation and the ease of administration. The number of school age children is precise. The estimation of preschool children has a sound research base.

The ten percent (10%), on the other hand, is arbitrary. It has no sound research base, although subjective reports are positive. Since the program is in its infancy, the validity of using ten percent (10%) as an estimate cannot be established.

Market Analysis - Alternative C

Exceptional Family Member Departmental estimates on patient population when the department is fully staffed and operational in conjunction with national professional statistics of the number of different patients treated per month per allied health profession.

A telephonic and/or personal interview was conducted with each Exceptional Family Member Department (Appendix K). Initially, the goal was to obtain information on the monthly statistics per allied health profession. However, all of the departments are in the infancy stage. Many are not fully staffed, without a physical location/office space and without necessary supplies. Information by profession was available from Landstuhl and Frankfurt only.

The overall estimate of patients when fully operational was therfore based on current caseload, consultation with educators and other health professionals, personal observation and experience. Some departments did not develop an estimate of their own; but used the ten percent of the total patient population proposed by the Seventh Medical Command consultant team.

The benefits of using this form of market survey include obtaining information from the allied health professinoal staff. Their experience and expertise can be applied.

The Exceptional Family Member Program is new both in concept and development. The professional staffs expertise in their field may not be comparable with this program. The population, team approach, and required travel may all impact on the number of patients which can be seen.

Market Analysis - Alternative D

Projective estimates utilizing current patient population plus the number of new referrals per month in conjunction with national professional statistics of the number of different patients treated per month per allied health profession.

According to the Seventh Medical Command consultation team, all EFMD personnel (active duty) should be at their work site by the beginning of the 1984 school year. The projected date for each EFMD to be fully operational is January 1985. [37] Using the current active patient population plus the number of new referrals per month for eight months (up to January 1984), an estimate of the total patient population when the EFMD's are fully operational can be derived.

This method allows for the use of current patient information. It assumes that new referrals will continue at the same rate as from January 1984 through April 1984.

The accuracy of the trend in number of new referrals and current caseload cannot be identified until the programs are fully operational. Thus the validity of the prediction is not known. This is one of the negative aspects of this alternative.

CHAPTER II

DISCUSSION

One hundred nine thousand four hundred sixty eight (109,468) children between the ages of zero (0) and seventeen (17) were identified within Germany, Shape and Vincenza. Using four market analysis procedures, personnel requirements were derived for each of the regions of responsibility for each Exceptional Family Member Department (Appendix L). The medical regions of responsibility and the areas of responsibility reported by Exceptional Family Member Departments did not always coincide.

The schools for which each Exceptional Family Member Department is responsible is included along with population statistics, school IEP statistics and allied health professional personnel requirement configurations (Appendix M). The information is arranged alphabetically by Exceptional Family Member Department.

In the application process of the market analysis procedures, three evaluative subsystems were identified. (These were described in the methodology section). The first subsystem requires the analysis of the type of Occupational Therapy treatment regime most applicable to the Exceptional Family Member Program. The second questions the utilization of the national professional statistics in all settings versus school settings. The third requires a decision on the percentages of the Exceptional Family Member Departments total patients expected to be seen by each profession.

Evaluation of these subsystems requires the use of problem solving and decision making techniques in order to derive the optimal conclusion for market analysis. Therefore, the Churchman - Ackoff technique for decision making was used for each.

Subsystem Evaluation - Occupational Therapy Treatment Regime

The optimal treatment schedule for Occupational Therapy should coalesce with the goal of the Exceptional Family Member Program. It should provide an environment for quality care. As many patients as possible should benefit without sacrificing quality.

Group treatments are only possible with certain diagnosis and presumes similarity of treatment needs. Locating children with this uniformity in one school or local area is not always possible. It is important to note that Occupational Therapists travel to and treat patients in individual schools. The distance can be such that the therapist must remain overnight. This procedure necessitates the therapist traveling rather than busing and/or having parents bring children from distant locations. It can also preclude grouping of similarly diagnosed children.

The alternatives reflect the number of different patients which can be seen in one day. Alternative one, allows twenty (20.7) individual patients to be seen per week. In alternative two, thirty three and three fourths (33.75) patients can be seen and the third alternative permits fourty six (46) patients to be seen (Appendix N).

The optimal feasible solution is alternative two, treatment of individual patients and one group (Appendix N). This solution encourages efficiency with effectiveness. It may exert considerable pressure, however, on therapists who are unable to arrange daily group treatment sessions.

Subsystem Evaluation - National Professional Statistics, All Settings versus School Settings

The national professional organizations for Physical Therapy, Speech Pathology and Audiology have separate data for the number of different patients seen per month for various settings. The use of the overall figure and the figure for school settings effects the resulting 'required' number of personnel for each setting. Although the Exceptional Family Member Program is unique, it would appear to be more closely aligned with school system data.

District allied health employees in the continental United States often travel between schools while maintaining a central office/treatment area. Exceptional Family Member Department personnel may have geographically larger areas to cover; but the concept is the same. In most other settings, an office/treatment area is maintained and the patient travels to the provider.

The optimal feasible solution is the second alternative, the school system data (Appendix O). This information appears directly applicable to the Exceptional Family Member Program. It should provide more accurate predictive benefits.

Subsystem Evaluation - Percentage of EFMD Patients Seen by Each Allied Health Service

Patient data for the majority of Exceptional Family Member Departments has not been separated by specialty. Instead, overall active patient load per month is reported. As programs develop, individual professional staff will maintain their own data. In order to accurately predict the number of personnel required, it is necessary to establish the percentage of the total number of Exceptional Family Member Department patients that are seen by each allied health specialty.

The percentage used should be directly applicable to the Exceptional Family Member Program. It will represent all Exceptional Family Member Departments and therefore should be as closely aligned as possible. This will increase the predictive value and accuracy of the statistics.

Alternative one assumes that one half of all patients will be seen by each service. One fourth is assumed in alternative two. The Frankfurt Exceptional Family Member Department percentages compile alternative three. Landstuhl percentages are alternative four. The fifth alternative uses the average of Landstuhl and Frankfurt percentages.

The optimal feasible solution is alternative five, the average of Landstuhl and Frankfurt percentages (Appendix P). Data for Speech Pathology and Audiology were not available for Landstuhl secondary to

the infancy of the programs. The average for Occupational and Physical Therapy will provide data which is directly connected to the Exceptional Family Member Program. It should be more widely applicable to other departments than that of either facility alone.

Market Analysis versus Initial Population Based Estimate

The various market analysis techniques and the initial population based estimate resulted in different numbers of personnel requirements (Appendix Q). The results of the market analysis alternatives resulted in personnel requirements that appear to exceed the financial capability of the program. Adequate supply of professionals to fill the requirements is also questionable.

In selecting the optimal procedure, the cost, both in terms of supply and financial constraints, must be considered. A more difficult cost to measure, is the personal cost of the patient, their family and their instructors should care not be available.

The procedure itself should not be overly costly financially or in duration. Information should be readily available. The optimal alternative should provide results which are directly applicable to the Exceptional Family Member Program. Use of accurate, soundly based statistics will increase the validity of the result and increase predictive value.

The technique should be as objective as possible, thus reducing responder bias. Data which will directly effect a departments

personnel assignments are subject to interpretation and over or under estimation. The knowledge and experience of the respondant can also bias results.

Optimal Feasible Solution

The optimal feasible solutions are alternative B, Population Percentile (10%) and National Professional Statistics and Alternative D, Projective Estimate and National Professional Statistics (Appendix R). These solutions meet the established criteria and provide the lowest risk.

The Initial Population Based Estimates, Alternative E, did not use professional standards to assist in developing personnel allocations. This decreased predictive value. It also reflected the opinions, experience and knowledge of those persons involved in the decision making.

Alternative A, Individualized Educational Programs and National Professional Statistics also relys heavily on subjective data. School teachers may or may not possess the knowledge base necessary to identify children with special needs. The program is new for the school system also. The number of needed special services listed by each school was extremely low, which may support the idea that teachers have difficulty with identification of children needing EFMP services (Appendix L).

Alternative C, Exceptional Family Member Department Estimate and National Professional Statistics may also reflect respondant bias. The estimation is based totally on the department or department chiefs

opinion. Many departments were reluctant to make this estimation and instead referred to the ten percent figure suggested by the Seventh Medical Command Consultant staff.

One of the optimal solutions was the use of the ten percent figure. This procedure is objective and the statistical data is readily available. Cost of the analysis is minimal. This procedure did, however, result in the largest number of personnel requirements. Subjective reports support the ten percent figure as being indicative of the population needing special educational and/or medical assistance.

The Projective Estimate and National Professional Statistics, Alternative D, assumes that the referral trend will remain the same. It is objective, but assumes that the program is active and known. A few departments addressed this issue stating that publicity has stated that they are not able to accept above a certain number of patients. Therefore, referrals are expected to increase considerably as new staff arrives and new promotion begins. Other departments reportedly expected referrals to begin to decrease. This procedure does not account for the time variance in establishment of different departments.

The optimal solution chosen, therefore, is the population percentage, Alternative B, as it appears to be the most reliable, accurate and objective. The optimal combination includes school based national statistics, Occupational Therapists treatment of one group and individual patients daily, and the average of the percentages for Landstuhl and Frankfurt.

CHAPTER III

CONCLUSIONS AND RECOMMENDATIONS

A difference was found in the recommended number and distribution of Allied Health Professional resource allocations (Occupational Therapists, Physical Therapists, Audiologists and Speech Pathologists) previously determined utilizing population based estimates and the recommended number and distribution of Allied Health Professional resource allocations based on market analysis procedures (Appendix S). Each of the market analysis techniques also produced results which differed from each other.

The optimal method of analysis for use in determining the number and distribution of personnel recommendations was found to be a population percentage. The percentage is based on epidemiological research of the incidence and prevalence of handicapping conditions. This method was found to be objective, to have a research base and to be easily administered.

The personnel recommendations resultant from this solution surpass practicality however. For example, one hundred fifty Physical Therapists would have to be hired under this conclusion. The most appropriate use for this information is in personnel assignments.

The highest ratios of personnel requirements (derived from the optimal solution) versus current projected assignment reflect the areas

of greatest need. For example, the three areas of greatest need for Occupational Therapy are Landstuhl (14.26:1), Augsberg (11.71:1) and Nuernberg (11.65:1). For Physical Therapy, Landstuhl (9.14:1), Augsberg (8.07:1) and Nuernberg (8.03:1) are identified. Speech Pathology needs are greatest in Frankfurt (9.51:1), Landstuhl (6.29:1) and Bad Cannstatt (4.53:1). Audiology needs at Frankfurt (7.59:1), Landstuhl (5.02:1) and Vincenza (4.8:1) are highest.

Also, if additional manpower can be gained, the highest ratio may identify the area where demand is greatest. The Occupational Therapy ratio for Landstuhl displays the largest discrepancy.

This information can also be used to encourage group treatment methods, as appropriate, for all professions. Consultant roles may need to be maximized, as well as parental home treatment programs and instruction of adaptive physical education teachers. In comparison with National Professional standards, a vast increase in professionals is needed. This program is new and innovative screening and treatment methods may need to be encouraged in order to provide quality treatment for the greatest number of patients.

In conclusion, the ratios of initially proposed personnel assignments and those depicted by the optimal feasible solution displaying the largest discrepancy should be targeted for increased manpower when available. Reallocation of personnel from areas with low ratio discrepencies could occur. The depth and breath of the EFMP will require evaluation and treatment mechanisms which provide maximal care with less personnel than professional standards would indicate. Innovation approaches are essential.

APPENDIX A

DEFINITIONS

Definitions[19]

1. Child-Find. The ongoing process used by DoDDS and the Military Departments to seek and identify children (from birth to 21 years of age) who show indications that they might be in need of special education and related services. Child-find activities include the dissemination and information to the public and identification, screening, and referral procedures.

2. Free Appropriate Public Education. Special education and related services that:

a. Are provided at no cost to parents or handicapped children and are under the general supervision and direction of DoDDS.

b. Provide appropriate preschool, elementary, or secondary school education.

c. Are provided in conformity with an Individualized Education Program.

d. Meet the requirements of this Instruction.

3. Handicapped Children. Those children, evaluated in accordance with this Instruction, who are mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed, orthopedically impaired, other health impaired, deaf-blind,

or multihandicapped, or have specific learning disabilities, and who because of such impairments need special education and related services.

a. Deaf. A hearing loss or deficit so severe that the child is impaired in processing linguistic information through hearing, with or without amplification, to the extent that his or her educational performance is adversely affected.

b. Deaf-blind. Concomitant hearing and visual impairments, the combination of which causes such severe communication and other developmental and educational problems that they cannot be accommodated in special education programs solely for deaf and blind children.

c. Hard of Hearing. A hearing impairment, whether permanent or fluctuating, that adversely affects a child's educational performance but that does not constitute deafness.

d. Mentally retarded. Significantly sub - average general intellectual functioning, existing concurrently with deficits in adaptive behavior and manifested during the developmental period, that adversely affects a child's educational performance.

e. Multihandicapped. Concomitant impairments (such as mentally retarded-blind or mentally retarded-orthopedically impaired), the combination of which causes such severe educational problems they cannot be accommodated in special educational programs solely for one of the impairments.

f. Orthopedically Impaired. A severe orthopedic impairment that adversely affects a child's educational performance. The term includes congenital impairments (such as clubfoot and absence of some member), impairments caused by disease (such as poliomyelitis and bone tuberculosis), and impairments from other causes (such as cerebral palsy), amputations, and fractures or burns causing contractures.

g. Other Health Impaired. Limited strength, vitality, or alertness due to chronic or acute health problems that adversely affect a child's educational performance, including heart condition, tuberculosis, rheumatic fever, nephritis, asthma, sickel-cell anemia, hemophilia, epilepsy, lead poisoning, leukemia, diabetes, or autism.

h. Seriously Emotionally Disturbed. A condition that has been confirmed by clinical evaluation and diagnosis and that, over a long period of time and to a marked degree, adversely affects educational performance, and that exhibits one or more of the following characteristics:

(1) An inability to learn that cannot be explained by intellectual, sensory, or health factors.

(2) An inability to build or maintain satisfactory interpersonal relationships with peers and teachers.

(3) Inappropriate types of behavior under normal circumstances.

(4) A tendency to develop physical symptoms or fears associated with personal or school problems.

(5) A general pervasive mood of unhappiness or depression.

The term includes children who are schizophrenic, but does not include children who are socially maladjusted, unless it is determined that they are seriously emotionally disturbed.

i. Specific Learning Disability. A disorder in one or more of the basic psychological processes involved in understanding or in using spoken or written language that may manifest itself as an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems that are primarily the result of visual, hearing, or motor handicaps, mental retardation, emotional disturbance, or environmental, cultural, or economic differences.

j. Speech Impaired. A communication disorder, such as stuttering, impaired articulation, language impairment, or a voice impairment, that adversely affects a child's educational performance.

k. Visually Handicapped. A visual impairment that, even with correction, adversely affects a child's educational performance. The term includes both partially seeing and blind children.

4. Individualized Education Program (IEP). A written statement for a handicapped child that is developed and implemented in accordance with this Instruction.

5. Regional Director. The Regional Director of a DoDDS region, or designee.

6. Related Services. Transportation and such developmental, corrective, and other supportive services as are required to assist a handicapped child to benefit from special education pursuant to that child's IEP. The term includes speech therapy and audiology, psychological services, physical and occupational therapy, recreation, early identification and assessment of disabilities in children, counseling services, and medical services for diagnostic or evaluative purposes. The term also includes school health services, social work counseling services in schools, and voluntary parent counseling.

a. Audiology. This term includes:

(1) Identification of children with hearing loss.

(2) Determination of the range, nature, and degree of hearing loss, including referral for medical or other professional attention designed to ameliorate or correct that loss.

(3) Provision of ameliorative and corrective activities, including language and auditory training, speech-reading (lip-reading), hearing evaluation, speech conservation, the recommendation of amplification devices, and other aural rehabilitation services.

b. Counseling Services. Services provided by qualified social workers, psychologists, guidance counselors, or other qualified personnel.

c. Early Identification. The implementation of a formal plan for identifying a disability as early as possible in the child's life.

d. Occupational Therapy. Services provided or supervised by a qualified occupational therapist.

e. Parent Counseling and Training. Assisting parents in understanding the special needs of their child's development and special education.

f. Physical Therapy. Services provided or supervised by a qualified physical therapist.

g. Psychological Services. This term includes:

(1) Administering psychological and educational tests and other assessment procedures.

(2) Interpreting test and assessment results.

(3) Obtaining, integrating, and interpreting information about a child's behavior and conditions relating to his or her learning.

(4) Consulting with other staff members in planning school programs to meet the speical needs of children, as indicated by psychological tests, interviews, and behavioral evaluations.

(5) Planning and managing a program of psychological services, including psychological counseling for children.

h. Recreation. This term includes:

(1) Therapeutic recreational activities.

(2) Recreational programs in schools and community agencies.

i. Social Work Counseling Services in Schools. This term includes:

(1) Preparing a social or developmental history on a handicapped child.

(2) Counseling the child and his or her family on a group or individual basis.

(3) Working with those problems in a child's home, school, and community that adversely affect the child's adjustment in school.

(4) Using school and community resources to enable the child to receive maximum benefit from his or her educational program.

j. Speech Therapy. This term includes the:

(1) Identification of children with speech or language disorders.

(2) Diagnosis and appraisal of specific speech or language disorders.

(3) Referral for medical or other professional attention to correct or ameliorate speech or language disorders.

(4) Provision of speech and language services for the correction, amelioration, and prevention of communicative disorders.

(5) Counseling and guidance of children, parents, and teachers for speech and language disorders.

7. Special Education. Specially designed instruction at no cost to the child or parent, to meet the unique educational needs of a handicapped child, including education provided in a school, at home, in a hospital or in an institution, physical education programs, and vocational education programs.

APPENDIX B

Information Paper

Provision of Health Related Services to Handicapped Dependents
(Note Third Page)

INFORMATION PAPER

DASG-PTB
22 Mar 82

SUBJECT: Provision of Health Related Services to Handicapped Dependents

1. BACKGROUND.

a. PL 94-142, Education for All Handicapped Children Act of 1975. Requires free appropriate education for all handicapped children to include special education and related services.

b. PL 95-561, Defense Dependents' Education Act of 1978. Mandates DODDS to implement PL 94-142.

c. DODI 1342.12, Education of Handicapped Children in the DOD Dependent Schools, 17 Dec 81. Requires medical departments responsible for medical care in each geographic OCONUS region to provide health related services to handicapped children in support of DODDS.

2. NEED FOR HEALTH RELATED SERVICES OCONUS.

a. Whole spectrum of handicapping conditions are present in 7th MEDCOM.

(1) Absence of policy excluding any categories of handicapping conditions from Europe.

(2) Absence of mandatory screening system.

(3) Inadequate screening process for those who voluntarily participate.

(4) Ability of sponsors to take dependents OCONUS at own expense after command sponsored tour is denied because educational services are not available.

(5) Discovery/development of handicapping conditions following OCONUS arrival of dependents.

(6) Hiding of dependent handicapping conditions by sponsor for fear of family separation, inability to be assigned to more isolated OCONUS position perceived to be essential to career, and embarrassment.

b. Exact numbers of children with handicapping conditions by type are not known.

c. Percentage of children with handicapping conditions estimated to be at least as high as in CONUS. The result of application of these percentages to estimates of the number of children in Europe are reflected on the attached table.

d. Pressures of living OCONUS increase probability of emotional problems and ability to effectively deal with such problems.

DASG-PTB
22 Mar 82

SUBJECT: Provision of Health Related Services to Handicapped Dependents

e. Certain categories of handicapping conditions are beyond the scope of treatment and education in Germany because of health related costs for providing adequate care and prognosis for improvement in environment.

3. AVAILABILITY OF HEALTH RELATED SERVICES OCONUS.

a. MTF's are currently staffed for traditional missions and priorities of care.

b. MTF's are not staffed with sufficient total health providers to assume the new handicapped mission with existing resources.

c. With the exception of a few child psychiatrists and child psychologists there are no health care providers with the unique training required to provide health care services to handicapped children (i.e., developmental pediatricians, pediatric OTs and PTs and specialists in pediatric orthotics).

d. There are limited facilities and equipment -- even for current workload and mission.

e. CHAMPUS is not a viable alternative for health related services OCONUS due to the negative impact of language barrier and custom differences on learning potential of handicapped children.

4. INITIATIVES TO COMPLY WITH DODI 1342.12. The AMEDD is currently working with the Army DCSPER to:

a. Identify handicapped children and code needs of these children for health related and educational services.

b. Identify and code availability of health related and educational services by assignment location throughout the world.

c. Develop procedure for automating and continually updating the needs of handicapped children and availability of services.

d. Develop automated assignment system which considers needs of sponsor's handicapped dependents for health and educational related services.

e. Determine prevalence rates of handicapping conditions in military dependents.

f. Establish capability to provide health related services at realistic levels at OCONUS locations consistent with prevalence rates of manageable handicapping conditions in military depenents.

ESTIMATED NUMBERS OF HANDICAPPED CHILDREN

USAEUR

Location	Children	Children Requiring Mental Health Care (8.6%)*	Children Requiring Psychiatric Professional Care (3%)*	Children With Physical/Neurological Impairment (12%)**
Frankfurt	39,510	3,398	1,185	4,471
Landstuhl	18,420	1,584	552	2,210
Heidelberg	18,300	1,573	549	2,196
Nuernberg	17,910	1,540	537	2,149
Bad Cannstatt	15,420	1,326	463	1,850
Wuerzburg	12,090	1,040	363	1,451
Augsburg	8,520	733	256	1,022
SHAPE	7,080	609	212	850
Bremerhaven	4,110	353	123	493
Berlin	3,360	289	101	403
Vicenza	2,970	255	89	356
TOTAL	147,690	12,700	4,430	17,721 = 34,851

* Source: Graduate Medical Education National Advisory Committee (GMENAC) Report 1981
**Source: Office of Special Education Programs, Department of Education (1981 figures)

APPENDIX C

Exceptional Family Member Program

Professional Assignment and Distribution

AEMPS-C (19 Jul 83)
SUBJECT: Exceptional Family Member Program (EFMP)

TO DCSPER FROM: Chief Surgeon DATE: 29 Jul 83 CMT 2
COL Meyer/sp/2122-579/735

1. The discussion that follows is intended to serve as an evolving concept plan and one that will support the DCSENG seminar mentioned above. Reference the EFMP, EFM refers only to handicapped as opposed to gifted individuals, and it includes personnel who are entitled to services in DOD medical facilities. Services are to be provided with the same priority as for active duty military members.

2. The EFMP is authorized by PL 94-142, PL 95-561 and DODI 1342.12 which mandates that "the Secretaries of the Military Departments shall provide those related services that are supplied by a physician or that require professional medical supervision. In general, those services, which are diagnostic and therapeutic in nature, shall be provided to DODDs by the appropriate military command having responsibility for medical care in the geographical region." Reference b further outlines functional tasks e.g. for the 7th MEDCOM:

a. participate in child find programs.

b. code the needs of EFM for health related services.

c. coordinate with schools to code special education needs of school-aged EFM.

d. provide coded needs of EFM for special education and health related services to MILPERCEN.

e. provide health related services to EFM in support of DODDs OCONUS.

f. participate with DODDs in the design of individualized education programs (IEP) of EFM OCONUS.

3. The driving force behind this legislation is to provide a free and appropriate public education to all children (US Citizens). Also, the EMFP will insure that military members with EFM are assigned only to locations where education and related services are available.

4. IAW above instruction, the 2 Medical Centers (MEDCENs) and 9 Medical Department Activities (MEDDACs) in the 7th Medical Command (MEDCOM) will each have a team of medical professionals capable of providing some diagnostic and most therapeutic services to EFM attending DODDs. Also, IAW above instructions, the Community Commanders in regions where the teams are being located are expected to provide the necessary support for the teams to fulfull their missions (para 6 below). Support includes treatment facilities construction/modification, utilities, transportation of EFM, etc.

AEAPS-C
SUBJECT: Exceptional Family Member Program (EFMP)

5. The personnel assigned to each MEDCEN/MEDDAC, within 7th MEDCOM, will function as a separate EFM Department (EMFD). Normally, the Chief, EFMD will be a pediatrician who reports to the MEDCEN/MEDDAC Chief of Professional Services. Exceptions to this must be approved by 7th MEDCOM. Patients, i.e. EFM, will be diagnosed and treated locally to the best of each EFMD's ability, as are patients in any other department. Similarly, more complex cases will be referred to the MEDCEN in Frankfurt for diagnosis and possibly for treatment. THe EFMD in Frankfurt will be the largest in USAREUR and it will also have the broadest range and greatest depth of highly trained and experienced personnel.

a. The relationship between/among EFMD, other than the Frankfurt EFMD, will be mainly to insure a smooth transfer of the case when a patient is relocated to another geographical area.

b. Some EFMD physical and occupational therapists will spend most of their time actually working in the schools.

c. In FY 85/86, some DAC EFMD personnel are programmed to staff outlying medical treatment facilities (MTF). At present, it will not be known if this is feasible until the 11 EFMDs begin to function in FY 84 and collect baseline data. Therefore, it appears plans, to include a stationing analysis, to establish an EFMD in outlying MTFs, will be premature for at least six months. Meanwhile, all EFMD personnel will be assigned to a MEDCEN or MEDDAC.

6. The EFMD in each facility has the following mission:

a. To provide multi-discipline diagnostic evaluations of children birth - 21 years, with handicapping conditions, in order to formulate a treatment plan designed to maximize each child's educational potential in support of DODDs.

b. To assist DODDs schools in developing Indivudual Education Plans (IEP) for EFM.

c. To provide supervision and guidance to EFMD therapists working in the schools.

7. The Frankfurt EFMD will, in addition to the above:

a. assist other EFMD for purposes of advanced training/continuing education in diagnosis and treatment, assistance in diagnosis of complex cases, and follow up of complex cases referred to them for diagnosis. This will require significant TDY and MEDCOM has requested 120K in FY 84 to support all TDY associated with the EFMD.

b. in conjunction with 7th MEDCOM, to function as the hub of an EFMD network in USAREUR: to coordinate policies, training and quality assurance of medical and medically related services offered as part of the EFMP.

8. EFMD personnel have started to arrive in Frankfurt and other locations. They require strong, active support from community and medical commanders as they begin to develop their departments, locate and receive patients, coordinate with DODDs, etc. In many cases, they will have to operate under less than optimum or complete space and equipment requirements. However, with proper support, these EFMD will evolve to "be all that they can" and are envisioned to be.

AEPS-C
SUBJECT: Expectional Family Member Program (EFMP)

9. The location and composition of EFMD and arrival dates of members are at Incl 2. Their location will indicate the region they serve (Incl 3), e.g., the Heidelberg MEDDAC EFMD will serve all of the personnel located in its region of responsibility.

10. Each EFMD must coordinate with the DODDs educational resource centers in their regions to develop and monitor IEPs. Some EFMD therapists will actually be located in DODDs schools. Both the EFMD and DODDs must actively pursue means to identify possible EFM and get them enrolled/involved in the EFMP. At the same time, the EFMD must coordinate within the MEDCEN/MEDDACs in the determination of clinic/office space, equipment, budget, rating schemes and operating policies/procedures.

11. The EFMD is dependent upon a great deal of support from the community. The EFMD has a mission to organize, provide and follow through on medical and most medically related services. The community must provide the facilities, utilities, etc.

a. It must be mentioned that Army Community Service (ACS) has a distinct role in support of the EFMP, e.g., child find, information, referral, respite care, advocacy and organizing community services (AR 608-1).

b. DODI 1342.12 describes related services, e.g., transportation "pursuant to the IEP", of an EFM as a related services. However, the legal obligation (by the community or medical commander) to provide transportation to and from medical services for EFM and accompanying personnel is not clear. This question is being addressed by the SJA who advises the Frankfurt/MEDCEN and may require final resolution at DOD levels.

c. The community must be informed of EFMD requirements in a complete, clear and timely manner by the MEDCEN/MEDDACs.

(1) The EFMD should be located as one integral unit, save the therapists at the schools. Specialities should NOT be separated. Preferably, the EFMD will be located as a part of the medical facility or in close proximity to it. This will facilitate the necessary interface between the EFMD and other medical departments and it will reduce administrative, security and other overhead, duplications.

(2) EFMD Space Requirements are at (Incl 4). Also, additional accurate and detailed requirements will be brought to the 8 Aug 83 seminar by attendees from some of the MEDCEN/MEDDACs, e.g., wherever an audiologist is assigned a 20,000 pound audiology booth will be required, each facility will require special rest rooms and wheelchair ramps. However, in most cases an assessment of what is available from the community must be correlated with an EFMD needs assessment. At this point, the community support agencies and the EFMD can work out support procedures, plans and request for local or higher level assistance. Also, the EFMD can assist the community agencies in their efforts to plan for and support the EFM in the community, e.g., modification of family quarters and recreation facilities, and methods of transportation.

AEMPS-C

10 AUG 1983

SUBJECT: Exceptional Family Member Program (EFMP)

e. EFMD Frankfurt, is available for professional assistance in determining equipment requirements and on-site assistance visits beginning in September. These assistance visits must be coordinated with LTC(P) Robert Wright, 2312-6289.

f. 7th MEDCOM has set up a team to assist MEDDAC/MEDCEN's implement the Exceptional Family Member Program. POCs are:

Clinical Assistance - LTC Milton P. Kale, Pediatric Consultant
Administrative Assistance - Mr. David Coon, Chief, Human Resources
Team Coordinator - COL Gregory C. Meyer, Social Work Consultant

FOR THE COMMANDER:

James G. Van Straten

JAMES G. VAN STRATEN
COL, MSC
Chief of Staff

2 Incl
as

DISTRIBUTION B+

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1 - Cdr, 7th MEDCOM, AEMCH
1 - Cdr, 7th MEDCOM, AEMPA

AEMPS-C
SUBJECT: Exceptional Family Member Program (EFMP)

12. Although exact EFM locations and types/degrees of handicaps are unknown, it is estimated that over 1,000 severely handicapped EFM are in USAREUR. Many of them will require diagnosis in Frankfurt, the others will be diagnosed in their local areas. I is anticipated that most EFM will not be diagnosed or treated as inpatients. Howeve the initial diagnosis, especially those that take place in Frankfurt, will average at 3 days per patient. Modified temporary housing will be required for the EFM and thos who accompany him/her depending upon the distances from home. Generally, the need f temporary housing will not be on a recurring basis once the diagnosis has been compl on an EFM. It is not anticipated that EFMD personnel will travel beyond a MEDCEN/ME to an EFM's location, unless that location were a school.

13. In terms of EFM beyond the age of 21, the EFMD will provide consultation to oth departments for the diagnosis and treatment of these patients.

4 Incl
Added 3 incl
as

QUINN H. BECKER
Major General, MC
Chief Surgeon

Pers thru FY 84 (Meddac guidance)
- does not incl FY 85/86 or outlying area FY 85/86

AUGSBERG

POSITION	MILITARY (OFFICER)	MILITARY (ENLISTED)	CIVILIAN
Developmental Pediatrician			1
Social Worker			1
Child Psychiatist			1
Child Psychologist			1
Speech Pathologist			1
Psychometrician			1
Administrator			1
Secretary			2
			9

DoDDS

Occupational Therapy	1
Physiotherapy	1
	2

PHASING: Targeted for April 84

BAD CANNSTATT

POSITION	MILITARY (OFFICER)	MILITARY (ENLISTED)	CIVILIAN
Developmental Pediatrician	1		1
Social Worker	1		1
Child Psychiatrist			1
Child Psychologist	1		1
Psychometrician			1
Occupational Therapist	1		
Physical Therapist	1		
OT Technician		1	
Audiologist			1
Speech Pathologist			1
Administrator			1
Public Health Nurse			1
Secretary			2
	5	1	11

DoDDS

Occupational Therapist	1
Physiotherapist	1
	2

PHASING: Military targeted for Jan 84
Civilian recruitment 1 Oct 83 for Jan 84 reporting date

BERLIN

POSITION	MILITARY (OFFICER)	MILITARY (ENLISTED)	CIVILIAN
Developmental Pediatrician			1
Social Worker			1
Child Psychologist			1
Speech Pathologist			1
Administrator			1
Secretary			1
			6
DoDDS			
Occupational Therapist			1
Physiotherapist			1
			2

PHASING: Targeted for April 84

BREMERHAVEN

POSITION	MILITARY (OFFICER)	MILITARY (ENLISTED)	CIVILIAN
Developmental Pediatrician			1
Social Worker			1
Child Psychologist			1
Occupational Therapist			1
Physical Therapist			1
Speech Pathologist			1
Secretary			1
			7

DoDDS

Occupational Therapist
Physiotherapist

PHASING: Targeted for April 84

FRANKFURT

POSITION	MILITARY (OFFICER)	MILITARY (ENLISTED)	CIVILIAN
Developmental Pediatrician	1		1
Pediatric Physiotrist	1		
Child Psychologist	2		
Child Psychiatist	1		
Social Worker	1		
Admin Officer	2		
Physiotherapist	3		
Occupational Therapist	2		
Audiologist	1		
Speech Pathologist			1
Community Health Nurse	1		
Nutritionist	1		
Developmental Optometrist	1		
OT Technician		2	
Behavioral Science Asst		2	
ENT Specialist		1	
Admin NCO		1	
Secretary			3
	17	6	5

DoDDS

Occupational Therapy	4
Physiotherapy	4
	8

PHASING: All military officers on board by 1 Oct 83 with the exception of the Physiotrist, Psychiatrist, and one psychologist. These expected to be in place by 1 Jan 84.

Enlisted will be phased in through Dec 83

Recruting now for speech pathologist (FY 83)

Recruit 1 Oct for 1 pediatrician and 3 secretaries

DoDDS OT & PT recruting effective 1 Aug 83

HEIDELBERG

POSITION	MILITARY (OFFICER)	MILITARY (ENLISTED)	CIVILIAN
Developmental Pediatrician	1		1
Social Worker	1		1
Child Psychiatrist			1
Child Psychologist	1		1
Psychometrician			1
Occupational Therapist	1		
Physical Therapist	1		
OT Technician		1	
Audiologist			1
Speech Pathologist			1
Administrator			1
Secretary			2
	5	1	10

DoDDS

Occupational Therapist	1
Physiotherapist	1
	2

PHASING: Military targeted for Jan 84.
Civilian recruitment 1 Oct 83 for Jan 84 reporting date

LANDSTUHL

POSITION	MILITARY (OFFICER)	MILITARY (ENLISTED)	CIVILIAN
Developmental Pediatrician	1		1
Pediatric Neurologist			1
Social Worker	1		1
Child Psychiatrist			1
Child Psychologist	1		1
Psychometrician			1
Occupational Therapist	2		
Physical Therapist	2		
OT Technician		1	
Behavioral Science Asst		2	
Speech Pathologist			1
Public Health Nurse			1
Administrator			1
Secretary			2
	7	3	11

DoDDS

Occupational Therapist	2
Physiotherapist	2
	4

PHASING: Military targeted for Jan 84
Civilian recruitment 1 Oct 83 for Jan 84 reporting date

NUERNBURG

POSITION	MILITARY (OFFICER)	MILITARY (ENLISTED)	CIVILIAN
Developmental Pediatrician	1		1
Social Worker	1		1
Child Psychiatrist			1
Child Psychologist	1		1
Psychometrician			1
Occupational Therapist	1		
Physical Therapist	1		
OT Technician		1	
Behavioral Science Asst		2	
Speech Pathologist			2
Community Health Nurse			1
Audiologist			1
Optometrist			1
Administrator			1
Secretary			2
	5	3	13

DoDDS

Occupational Therapist	1
Physiotherapist	1
	2

PHASING: Military targeted for Jan 84
Civilian recruitment 1 Oct 83 for Jan 84 reporting date

SHAPE

POSITION	MILITARY (OFFICER)	MILITARY (ENLISTED)	CIVILIAN
Developmental Pediatrician			1
Social Worker			1
Child Psychologist			1
Speech Pathologist			1
Audiologist			1
Secretary			1
			6
DoDDS			
Occupational Therapy			1
Physiotherapy			1
			2

PHASING: Targeted for April 84

VICENZA

POSITION	MILITARY (OFFICER)	MILITARY (ENLISTED)	CIVILIAN
Developmental Pediatrician			1
Social Worker			1
Child Psychologist			1
Physiotherapist			1
Occupational Therapist			1
Speech Pathologist			1
Secretary			1
			7

DoDDS

Occupational Therapy
Physiotherapy

PHASING: Targeted for April 84

APPENDIX D

Occupational Therapy Treatment Regimes

APPENDIX D

Estimated number of different patients treated per month for Occupational Therapy and Physical Therapy.

8.3 patients per day = mean average

- if each patient is seen twice a week then 20.7 different patients are seen each week

- if each patient is seen three times a week then 12.45 patients can be seen on that basis and 4.15 can be seen for initial evaluation/consultation, etc. i.e. 16.6 patients can be seen.

Utilizing the higher figure, it is estimated that the average number of different patients seen by an Occupational Therapist per month 20.7. This would allow for some patients to be seen more frequently and some less frequently, hopefully giving an accurate estimate.

Physical therapists treat an mean of 8.3 patients per day in school settings. Patients generally require treatments two to three times per week. Therefore, the same number of individual patients seen per month (20.7) will be used for Physical Therapy. The general number of patients treated by Physical Therapy is 7.09. This figure will also be used in the manner described above as 17.73 patients per month.

Occupational Therapists also treat patients in group settings when appropriate for patient diagnosis and physical location. Occupational Therapists spend 69.3% of their day in provision of direct patient care. 69.3% of an 8 hour day = 5.54 hours

a. Provision of care for 8.3 patients/day x 40.4 minutes (average time per individual visit) - 5.59 hours

b. If one group a day were run (average time = 54 minutes, average size = 6.2 patients) and 7 individual patients were seen:

54 minutes of group + 7 individual patients x 40.4 average minutes per individual

$$= \frac{336.8 \text{ minutes}}{60 \text{ minutes}} = 5.61 \text{ hours}$$

This would allow the Occupational Therapist to see 33.75 different patients per month.

c. If two group sessions were run per day (average time per group = 54 minutes, average size = 6.2 patients) and 6 individual patients were seen.

108 minutes of group + 6 individual patients x 40.4 minutes per individual

$$= \frac{350.4 \text{ minutes}}{60 \text{ minutes}} = 5.8 \text{ hours per day}$$

This would allow the Occupational Therapist to see 46 different patients per month.

APPENDIX E

Occupational Therapy

Statistics

GEOGRAPHIC DISTRIBUTION OF AOTA MEMBERS (THERAPISTS AND ASSISTANTS) AND THEIR RATIO TO THE U.S. POPULATION, 1983

State of Residence	Pop. x 1000- (7/83)	OTRs in U.S. (1983)	Ratio OTRs to Pop.	COTAs in U.S. (1983)	Ratio COTAs to Pop.
U. S. Total	233,981	27,364	1/8,551	6,613	1/35,382
Alabama	3,959	161	24,590	70	56,557
Alaska	479	74	6,473	7	68,429
Arizona	2,963	331	8,952	41	72,268
Arkansas	2,328	122	19,082	9	258,667
California	25,174	3,596	7,001	400	62,935
Colorado	3,139	767	4,093	52	60,365
Connecticut	3,138	461	6,807	131	23,954
Delaware	606	56	10,821	6	101,000
Dist. of Col.	623	88	7,080	9	69,222
Florida	10,680	872	12,248	132	80,909
Georgia	5,732	322	17,801	24	238,833
Hawaii	1,023	218	4,693	57	17,947
Idaho	989	67	14,761	4	247,250
Illinois	11,486	1,260	9,116	347	33,101
Indiana	5,479	489	11,205	96	57,073
Iowa	2,905	226	12,854	94	30,904
Kansas	2,425	433	5,601	56	43,304
Kentucky	3,714	130	28,569	18	206,333
Louisiana	4,438	268	16,560	13	341,385
Maine	1,146	173	6,624	28	40,929
Maryland	4,304	602	7,150	105	40,991
Massachusetts	5,767	1,383	4,170	360	16,019
Michigan	9,069	1,578	5,747	274	33,099
Minnesota	4,144	1,025	4,043	718	5,772
Mississippi	2,587	55	47,036	7	369,571
Missouri	4,970	574	8,659	31	160,323
Montana	817	67	12,194	10	81,700
Nebraska	1,597	112	14,259	20	79,850
Nevada	891	68	13,103	5	178,200
New Hampshire	959	279	3,437	89	10,775
New Jersey	7,468	746	10,011	129	57,892
New Mexico	1,399	168	8,327	12	116,583
New York	17,667	2,419	7,303	1,001	17,649
North Carolina	6,082	329	18,486	32	190,063
North Dakota	680	136	5,000	91	7,473
Ohio	10,746	964	11,147	304	35,349
Oklahoma	3,298	225	14,658	67	49,224
Oregon	2,662	313	8,505	99	26,889
Pennsylvania	11,895	1,182	10,064	459	25,915
Rhode Island	955	89	10,730	13	73,462
South Carolina	3,264	136	24,000	16	204,000
South Dakota	700	47	14,894	20	35,000
Tennessee	4,685	157	29,841	82	57,134
Texas	15,724	1,406	11,184	284	55,366
Utah	1,619	76	21,303	5	323,800
Vermont	525	64	8,203	20	26,250
Virginia	5,550	631	[illegible]	47	[illegible]
Washington	4,300	843	[illegible]	127	[illegible]
West Virginia	1,965	43	45,698	7	280,714
Wisconsin	4,751	1,316	[illegible]	[illegible]	[illegible]
Wyoming	515	[illegible]	[illegible]	[illegible]	[illegible]

OTRs			COTAs	
Mean	Median	Patient Visit Data+	Mean	Median
8.3	7.7	What is the average number of INDIVIDUAL (not group) patient/client visits you have per day?	9.7	8.1
2.6	1.9	What is the average number of GROUP patient/client sessions you have per day?	3.0	2.2
6.2	5.2	What is the number of patients/clients in a group session?	8.2	6.7
		What is the average length of:		
40.4	30.4	-an individual patient/client visit?	38.3	30.1
54.0	50.2	-a group session?	58.2	58.9
69.3%	74.7%	What percentage of your time is spent in direct patient/client contact?	72.5%	75.2%

+Full-time occupational therapy personnel whose primary employment function is direct patient/client service.

What is the age range of the patients/clients with whom you usually work?

OTRs			COTAs	
No.	%	Responses	No.	%
103	1.0	Infant (under 1 yr)	2	0.1
530	4.9	Preschool (1-4 yrs)	35	2.3
1004	9.3	Primary School Age (5-12 yrs)	69	4.5
196	1.8	Secondary School Age (13-18 yrs)	30	1.9
1727	16.0	Two or More of the Above	133	8.6
3589	33.2	Adult (19-64 yrs)	510	33.1
1437	13.3	65+ years	416	27.0
2218	20.5	Mixed Ages	347	22.5
10,804	100.0	Total Responses	1542	100.0
3,111		No Response	564	
13,915		Grand Total	2106	

APPENDIX F

Derivation of Frankfurt and Landstuhl Percentages

DERIVATION OF PERCENTAGES

Frankfurt (using March 1984 statistics)

Total patients on active file = 300

Physical Therapy patients on active file = 138

46% of patients seen in the Frankfurt EFMD are seen by Physical Therapy

Occupational Therapy patients on active file = 234

78% of patients seen in the Frankfurt EFMD are seen by Occupational Therapy

Speech Pathology patients on active file - 107

36% of patients seen in the Frankfurt EFMD are seen by Speech Pathology

Audiology patients on active file = 144

48% of patients seen in the Frankfurt EFMD are seen by Audiology

Landstuhl (using April - May 1984 statistics)

Total patients on active file = 277

Physical Therapy patients on active file = 28

10% of patients seen in the Landstuhl EFMD are seen by Physical Therapy

Occupational Therapy patients on active file = 164

59% of patients seen in the Landstuhl EFMD are seen by Occupational Therapy

No statistics are available for Audiology or Speech Pathology. There is no EFMD Audiologist and separate records for EFMD patients have not been kept. The EFMD Speech Pathologist has been working for one month.

APPENDIX G

Alternative A Components

ALTERNATIVE A

Department of Defense Special Education census information on the number of children identified as having Individualized Educational Programs (IEP's) in conjunction with national professional statistics of the number of different patients treated per month per allied health profession.

Information Reported:

1) Total number of children with Individualized Educational Programs.

2) Number of allied health professionals needed if:

a. Half of the children with IEP's need services.

b. One fourth of the children with IEP's need services.

c. Landstuhl EFMD percentages of the total number of children seen per allied health profession need services.

d. Frankfurt EFMD percentages of the total number of children seen per allied health profession need services.

3) Number of allied health professionals needed using:

a. Overall mean number of different patients seen per month per profession.

b. Mean number of different patients seen per month in a school setting per profession.

4) Number of Occupational Therapists needed if treatments include:

a. Individual patients per day

b. Individual patients and one group per day

c. Individual patients and two groups per day

APPENDIX H

Department of Defense

Special Education Census Example

DODS SPECIAL EDUCATION CENSUS BY REGIONS

FORM A

IDENTIFIED STUDENTS WITH SPECIAL NEEDS/RELATED SERVICES

Information Obtained from Student's Individualized Education Program

REGION DODDS-Germany

DATE 22 February 1984

SCHOOL Bad Kissingen American Elementary

ELIGIBILITY CRITERIA	1 REG	2 10-20	3 20-50	4 50-100	5 Sp. Day	6 H/H	7 R.I.	8 Pre/Nur	STUDENT TOTAL 9	RELATED SERVICES a OT	b PT	c A	d C	e PO	f PT	g PE	h R	i VE	j VS	k SP	l ST	Related Services TOTAL
A. Physical or Sensory Impairment (visual, hearing, orthopedic, & other health impairments)																						
B. Emotional Impairment																						
C. Communication Impairment		16						2	18													
D. Learning Impairment		13							13				1									1
TIME IN CLASS PLACEMENT								GRAND TOTAL	31	RELATED SERVICES												1

1. Regular class with modifications
2. Special education resource class 10-20% of school day
3. Special education part-time class 20-50% of school day
4. Special education full-time class 50-100% of school day
5. Placement in a special day school
6. Educational instruction provided in hospital or home
7. Placement in a residential institution
8. Placement in nursery, or early childhood preschool program

a. Occupational therapy
b. Physical therapy
c. Audiology
d. Counseling
e. Psychological (diagnostic)
f. Psychological (therapeutic)
g. Adaptive physical education
h. Recreational
i. Vocational education
j. Cooperative work study (job training)
k. Speech therapy (off-site, Non-DoDDS)
l. Special transportation

DDS SPECIAL EDUCATION CENSUS BY REGIONS

IDENTIFIED STUDENTS WITH SPECIAL NEEDS/RELATED SERVICES

FORM B

REGION DODDS-Germany

GRADE LEVEL

DATE February 22, 1984

SCHOOL Bad Kissingen American Elementary

ELIGIBILITY CRITERIA	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	(Male)	(Fem.	TOTAL
A. Physical or Sensory Impairment (visual, hearing, orthopedic, & other health impairments)																				
B. Emotional Impairment																				
C. Communication Impairment		2	3	1	1	5	2	1	3									15	3	18
D. Learning Impairment					3	3	4	1	2									5	8	13

* four students listed as communication impaired are also served by LD

seven students listed as learning impaired are also served by speech

9 Infant stimulation (home/school support)
10 Preschool/early childhood
11 Kindergarten
12 First grade
13 Second grade
14 Third grade
15 Fourth grade
16 Fifth grade
17 Sixth grade
18 Seventh grade
19 Eighth grade
20 Ninth grade
21 Tenth grade
22 Eleventh grade
23 Twelfth grade
24 Home Instruction
25 Post High School

APPENDIX I

Epidemiological Statistics

LOCATION	TRAINABLE (1/10%) AND EDUCABLE (8/10%) MENTALLY RETARDED [1]	SPEECH IMPAIRMENT (7-10%) [4]	READING DISABILITY (10%) [5]	HYPERACTIVITY DECREASED ATTENTION SPAN (4-10%) [6]
FRANKFURT	242	1881	2687	1075
LANDSTUHL	235	1827	2610	1044
HEIDELBERG	95	739	1056	422
NUERNBERG	103	802	1147	459
BAD CANNSTATT	78	613	876	350
WUERZBERG	62	486	695	278
AUGSBERG	51	402	576	230
SHAPE	38	292	416	167
BREMERHAVEN	23	179	256	102
BERLIN	19	141	201	80
VINCENZA	34	265	379	151

1 Source: Graduate Medical Education National Advisory Committee Report, 1981
2 Source: Office of Special Education Programs, Department of Education, 1981
3 Source: Green, Morris. Pediatric Diagnosis, WB Saunders Company, London, 1980,p.400
4 Source: Interview with CPT Pat Patterson, MSC, Social Work Service, Exceptional Family Member Department, Heidelberg
5 Source: Rudolph, Abraham.Pediatrics 17th Edition, Appleton - Century - Craft, Connecticut, 1982, p.65
6 Source: Barness, Lewis. Advances in Pediatrics Vol.23, Year Book Medical Publishers Inc., Chicago, 1976, p.117

LOCATION	# SCHOOL AGE CHILDREN	CHILDREN REQUIRING MENTAL HEALTH CARE (8.6%)[1]	CHILDREN REQUIRING PROFESSIONAL PSYCHIATRIC CARE (3%)[2]	CHILDREN WITH PHYSICAL/NEUROLOGICAL (12%)[3]	LEARNING IMPAIRMENTS (10-30%)[3]
Frankfurt	26873	2311	806	3225	2687
Landstuhl	26100	2245	783	3132	2610
Heidelberg	10561	908	317	1267	1056
Nuernberg	11468	986	344	1376	1147
Bad Cannstatt	8759	753	263	1051	876
Wuerzburg	6946	597	208	833	695
Augsberg	5759	495	180	691	576
SHAPE	4164	358	125	500	416
Bremerhaven	2558	220	77	307	256
Berlin	2010	173	60	241	201
Vincenza	3785	326	114	454	379

APPENDIX J

Actual Department of Defense School Enrollment

ACTUAL ENROLLMENT REPORT — As Of: 30 April 1984 — Option BA

GRADE:	SE	KN	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
Kaiserslautern ES	0	41	40	34	31	25	22	20	0	0	0	0	0	0	213
Kelsheim ES	0	23	18	9	11	6	9	5	0	0	0	0	0	0	81
Ludwigsburg ES	0	188	236	177	205	168	0	0	0	0	0	0	0	0	974
Mainz ES	0	193	157	143	130	132	110	94	0	0	0	0	0	0	959
Mannheim ES	0	347	406	319	245	262	238	0	0	0	0	0	0	0	1817
Memmingen ES	0	10	4	5	5	7	4	5	0	0	0	0	0	0	40
Moenchengladbach	0	9	4	9	13	7	12	7	2	7	0	0	0	0	70
Muenster ES	0	18	21	14	9	9	7	8	3	9	0	0	0	0	98
Muesch ES	4	87	73	76	74	71	103	78	0	0	0	0	0	0	566
Nellingen ES	0	73	90	67	62	65	59	55	0	0	0	0	0	0	471
Neubruecke ES	0	54	55	48	43	26	27	31	0	0	0	0	0	0	284
Nuernberg ES	23	422	261	207	188	162	141	117	0	0	0	0	0	0	1521
Osterholz-Scharmbeck ES	0	159	140	132	93	95	89	84	0	0	0	0	0	0	792
Patch ES	0	86	85	85	113	100	107	92	0	0	0	0	0	0	668
Pforzheim ES	0	9	8	6	2	3	2	0	0	0	0	0	0	0	30
Pruem ES	0	23	17	23	19	17	16	8	0	0	0	0	0	0	123
Rastatt ES	0	301	289	305	338	301	312	297	0	0	0	0	0	0	2143
Regensburg ES	0	3	11	7	3	4	3	1	3	3	0	0	0	0	38
Rhein Main ES	60	189	205	192	163	148	178	169	0	0	0	0	0	0	1304
Rheinberg ES	0	15	16	8	8	10	11	10	0	0	0	0	0	0	78
Ruetcheim ES	0	21	20	19	11	12	12	7	0	0	0	0	0	0	102
Schwaebisch-Gmuend ES	0	72	43	53	38	48	36	30	20	22	0	0	0	0	362
Schwaebisch-Hall ES	0	41	36	26	30	25	21	21	0	0	0	0	0	0	200
Schweinfurt ES	0	220	229	211	175	139	125	120	0	0	0	0	0	0	1219
Seebach ES	0	137	136	119	122	0	0	0	0	0	0	0	0	0	514
Smith ES/Baumholder	0	141	115	110	74	62	59	49	0	0	0	0	0	0	610
Boegel ES	0	11	7	10	9	8	6	6	0	6	0	0	0	0	63
Spangdahlem ES	0	136	154	144	124	141	143	102	0	0	0	0	0	0	944
Sportsfield ES/Hanau	0	0	191	187	139	150	130	109	0	0	0	0	0	0	906
Strullendorf ES	0	90	76	72	51	43	28	28	0	0	0	0	0	0	388
Trier ES	0	22	26	15	12	22	15	12	0	0	0	0	0	0	124
Vogelwen ES/Kaiserslauter	33	217	220	155	165	171	119	111	0	0	0	0	0	0	1191
Zwierhof ES	0	13	16	9	11	5	6	3	0	0	0	0	0	0	63
Wertheim ES	0	50	49	40	26	27	29	31	0	0	0	0	0	0	252
Wetzel ES/Baumholder	0	87	79	95	93	77	70	68	0	0	0	0	0	0	569
Wildflecken ES	7	99	81	62	59	45	50	38	0	0	0	0	0	0	441
Worms ES	0	60	65	49	63	59	69	56	0	0	0	0	0	0	421
Wuerzburg ES	11	202	188	168	135	144	142	108	0	0	0	0	0	0	1098
Yrreuzberg ES	0	95	77	72	66	73	65	75	0	0	0	0	0	0	523
Zweibruecken ES	0	91	91	92	86	74	69	64	0	0	0	0	0	0	567
T O T A L S	358	10048	9855	8565	7869	7351	6907	6371	6129	5319	4447	3596	2950	2365	82130

ACTUAL ENROLLMENT REPORT — As Of: 30 April 1984 — Option 8A

GRADE:	SE	KN	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
Augsburg ES	10	251	234	212	212	186	139	139	0	0	0	0	0	0	1383
Aukamm ES/Wiesbaden	0	76	75	74	88	74	91	0	0	0	0	0	0	0	478
Babenhausen ES	0	50	45	39	39	24	35	28	0	0	0	0	0	0	260
Bad Aibling ES	0	13	19	11	12	16	16	14	23	10	0	0	0	0	134
Bad Hersfeld ES	0	53	40	20	39	19	18	18	0	0	0	0	0	0	207
Bad Kissingen ES	0	67	58	46	30	27	40	32	0	0	0	0	0	0	300
Bad Kreuznach ES	0	122	99	92	87	71	72	78	0	0	0	0	0	0	621
Bad Nauheim ES	0	70	74	69	56	42	35	34	0	0	0	0	0	0	380
Bad Toelz ES	0	38	31	35	31	32	33	24	17	23	0	0	0	0	264
Bamberg ES	0	113	138	72	82	84	86	56	0	0	0	0	0	0	631
Berchtesgad n ES	0	4	4	4	4	4	1	3	5	2	0	0	0	0	31
Berlin ES	6	249	257	187	187	178	150	167	0	0	0	0	0	0	1381
Bindlach ES	1	40	38	25	24	14	20	21	8	9	0	0	0	0	200
Bitburg ES	0	210	183	165	142	145	146	0	0	0	0	0	0	0	991
Boeblingen ES	0	81	95	78	64	52	50	55	0	0	0	0	0	0	475
Bonn ES	2	28	35	36	45	32	55	51	0	0	0	0	0	0	284
Bremerhaven ES	0	92	91	97	79	62	70	55	0	0	0	0	0	0	546
Buechel ES	0	6	3	5	2	6	1	0	0	0	0	0	0	0	23
Bueren ES	0	24	15	19	8	10	8	7	7	4	0	0	0	0	102
Butzbach ES	0	176	164	137	116	106	104	66	0	0	0	0	0	0	869
Crailsheim ES	0	52	45	39	28	22	22	16	22	34	0	0	0	0	280
Darmstadt ES	0	129	132	139	115	113	0	0	0	0	0	0	0	0	628
Delmenhorst ES	0	13	8	7	12	10	8	6	0	0	0	0	0	0	64
Dexheim ES	0	25	32	22	17	17	14	14	0	0	0	0	0	0	141
Erlangen ES	0	102	102	99	65	72	48	50	0	0	0	0	0	0	538
Flensburg ES	1	6	5	3	9	2	7	3	3	5	0	0	0	0	44
Frankfurt ES	11	139	250	221	217	225	169	204	0	0	0	0	0	0	1436
Garmisch ES	0	15	21	20	10	11	3	16	11	10	0	0	0	0	117
Geilenkirchen ES	0	61	57	70	49	38	36	54	53	26	0	0	0	0	444
Geilnhausen ES	0	109	108	82	62	72	63	48	0	0	0	0	0	0	544
Giessen ES	4	129	131	94	99	94	73	74	0	0	0	0	0	0	698
Grafenwoehr ES	0	100	74	66	46	71	52	54	0	0	0	0	0	0	463
Hahn ES	0	175	174	169	146	162	126	128	0	0	0	0	0	0	1080
Hainerberg ES	31	299	261	209	212	180	173	0	0	0	0	0	0	0	1365
Heidelberg ES #1	0	97	103	98	74	72	60	0	0	0	0	0	0	0	504
Heidelberg ES #2	20	185	213	183	211	211	207	0	0	0	0	0	0	0	1230
Heser ES	0	7	5	4	3	2	4	2	2	0	0	0	0	0	29
Herborn-Seelbach ES	0	11	14	6	9	5	5	4	0	0	0	0	0	0	54
Hessisch Oldendorf ES	0	36	30	27	35	33	22	19	11	14	0	0	0	0	227
Hohenfels ES	0	43	22	16	18	22	15	15	19	16	0	0	0	0	186
Idar Oberstein ES	0	47	35	32	38	19	23	18	0	0	0	0	0	0	212
Illesheim ES	0	91	70	61	50	56	52	30	33	29	0	0	0	0	472
Jever ES	0	5	5	7	4	2	2	1	4	0	0	0	0	0	30
Johann Kalb ES/Nuernberg	1	0	155	143	124	97	113	96	0	0	0	0	0	0	729
Kaiserslautern ES	0	189	196	187	180	162	193	165	0	0	0	0	0	0	1272
Kalkar ES	0	11	11	17	6	9	9	9	13	13	0	0	0	0	98
Karlsruhe ES	0	166	200	154	98	123	110	108	0	0	0	0	0	0	959
Kaefferbach ES	0	66	67	56	49	0	0	0	0	0	0	0	0	0	238
Kerpen ES	0	13	12	8	9	9	6	6	0	0	0	0	0	0	63
Landstuhl E/MS	5	92	102	115	106	95	108	108	108	0	0	0	0	0	839

ACTUAL ENROLLMENT REPORT — As Of: 30 April 1984 — Option 8A

GRADE:	SE	KN	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
Ansbach HS	0	0	0	0	0	0	0	0	99	87	101	73	44	37	461
Augsburg HS	2	0	0	0	0	0	0	0	141	117	110	95	60	55	580
Bad Kreuznach HS	0	0	0	0	0	0	0	0	78	87	63	40	33	21	322
Bamberg HS	0	0	0	0	0	0	0	0	99	73	74	48	32	24	350
Bauamholder HS	0	0	0	0	0	0	0	0	135	101	113	82	60	45	536
Berlin HS	0	0	0	0	0	0	0	0	160	146	113	107	65	79	670
Bitburg HS	16	0	0	0	0	0	0	0	0	0	185	121	131	83	536
Bonn HS	2	0	0	0	0	0	0	0	47	54	53	56	66	49	327
Frankfurt HS	0	0	0	0	0	0	0	0	0	0	0	431	348	265	1044
Hahn HS	0	0	0	0	0	0	0	0	129	108	83	73	54	40	487
Hanau HS	0	0	0	0	0	0	0	0	234	191	208	173	148	100	1054
Heidelberg HS	0	0	0	0	0	0	0	0	0	0	262	212	157	143	774
Kaiserslautern HS	0	0	0	0	0	0	0	0	0	0	183	260	197	163	803
Karlsruhe HS	0	0	0	0	0	0	0	0	110	61	78	60	46	38	393
Mannheim HS	0	0	0	0	0	0	0	0	0	0	198	168	147	115	628
Munich HS	0	0	0	0	0	0	0	0	87	81	128	140	104	99	639
Nuernberg HS	1	0	0	0	0	0	0	0	263	213	191	135	114	99	1016
Osterholz HS	0	0	0	0	0	0	0	0	140	89	106	82	64	56	537
Pitch HS	0	0	0	0	0	0	0	0	157	173	192	132	142	122	918
Ramstein HS	0	0	0	0	0	0	0	0	0	0	0	244	242	175	661
Stuttgart HS	0	0	0	0	0	0	0	0	0	0	280	160	153	129	722
Ulm E/HS	8	88	78	68	57	55	43	35	68	46	43	40	28	21	678
Wiesbaden HS	0	0	0	0	0	0	0	0	0	0	256	192	164	139	751
Wuerzburg HS	0	0	0	0	0	0	0	0	131	144	150	203	125	132	885
Zweibruecken HS	0	0	0	0	0	0	0	0	150	144	125	153	125	102	799
Frankfurt JHS	0	0	0	0	0	0	0	0	325	278	250	0	0	0	853
Giessen JHS	0	0	0	0	0	0	0	0	157	104	80	0	0	0	341
Kaiserslautern JHS	0	0	0	0	0	0	0	0	266	230	0	0	0	0	496
Ramstein JHS	0	0	0	0	0	0	0	0	270	368	293	0	0	0	931
Rhein Main JHS	0	0	0	0	0	0	0	0	156	119	163	0	0	0	438
Schweinfurt JHS	0	0	0	0	0	0	0	0	128	101	85	0	0	0	314
Sembach JHS	0	0	0	0	0	111	123	122	131	145	106	0	0	0	738
Bitburg MS	0	0	0	0	0	0	0	136	239	251	0	0	0	0	626
Darmstadt MS	0	0	0	0	0	0	115	86	91	82	0	0	0	0	374
Heidelberg MS	0	0	0	0	0	0	0	282	309	259	0	0	0	0	850
Ludwigsburg MS	0	0	0	0	0	0	142	149	141	129	0	0	0	0	561
Mannheim MS	0	0	0	0	0	0	0	219	260	247	0	0	0	0	726
Wiesbaden MS	0	0	0	0	0	0	0	238	357	312	0	0	0	0	907
Aschaffenburg E/JHS	1	147	141	129	84	103	80	65	64	55	0	0	0	0	869
Fulda E/HS	0	141	100	99	84	85	58	61	108	75	63	59	39	15	987
Goeppingen E/JHS	0	71	65	45	52	37	41	38	35	41	0	0	0	0	425
Heilbronn E/JHS	6	146	140	103	94	81	65	70	50	40	0	0	0	0	795
Kitzingen E/JHS	0	144	147	125	142	126	110	99	96	59	0	0	0	0	1048
Pirmasens E/JHS	0	188	176	147	141	122	134	96	122	81	45	0	0	0	1252
Stuttgart E/JHS	28	100	92	89	95	88	69	84	133	89	0	0	0	0	867
Vilseck E/HS	0	43	58	45	47	46	42	47	96	97	67	57	42	19	706
Aaberg ES	0	38	39	28	29	25	17	24	0	0	0	0	0	0	200
Ansbach ES	0	118	117	66	99	129	103	105	0	0	0	0	0	0	757
Argonner ES/Hanau	0	358	143	118	110	95	94	79	0	0	0	0	0	0	997
Attenbury ES/Frankfurt	64	235	186	132	143	115	134	121	0	0	0	0	0	0	1130

APPENDIX K

EFMD Interview/Questionnaire

TELEPHONE AND/OR PERSONAL INTERVIEW

FOR EXCEPTIONAL FAMILY MEMBER DEPARTMENTS

1. What are the names of the schools that your department is responsible for?

2. What is your total treatment caseload at this time?

3. What is the total number of children on your waiting list for initial evaluation?

4. How many new referrals do you receive per month? (An average for the months January 1984 - April 1984).

5. In your opinion, how many total patients do you expect when you are fully staffed and fully operational?

APPENDIX L

Department of Defense Schools Located in Germany

DODDS SCHOOLS LOCATED IN GERMANY

APPENDIX M

Exceptional Family Member Department Statistics by Region

APPENDIX M

EFMD STATISTICS BY REGION

Augsberg EFMD (2582-4453)

1. Schools responsible for:

   Augsberg E

   Augsberg H

   Bad Toelz E

   Bad Aibling E

   Berchtesgaden E

   Garmish E

   Laupheim E

   Leipheim E

   Memmingen E

   Munich E

   Munich H

   Ulm E

2. Total school age population: 4607
   Total school age plus 0 - 5 population: 5759

3. Male/Female ratio for IEP's

   71%/29%

4. Total number of related services required on IEP's: 50.

5. Total number of IEP's = 345

E = Elementary School

H = High School

M = Middle School

JH = Junior High School

AUGSBERG EFMD

Alternative A. IEP's and National Professional Statistics
Total Number of IEP's = 345

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	8.33	4.17	13	9.83
Individual Patients - One Group	5.11	2.56	7.97	6.03
Individual Patients - Two Groups	3.75	1.88	5.85	4.43
Physical Therapists Required:			46%	10%
Overall Setting	9.73	4.67	8.95	1.97
School Setting	8.33	4.17	7.67	1.69
Speech Pathologists Required:			36%	
Overall Setting	3.92	1.96	2.82	N/A
School Setting	3.36	1.68	2.42	N/A
Audiologists Required:			48%	
Overall Setting	1.67	.84	1.61	N/A
School Setting	2.01	1.01	1.93	N/A

AUGSBERG EFMD

Alternative B. Population percentile (10%) and National Professional Statistics

Total Population = 5759

Ten Percent = 575.9 = estimated active patient load

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	13.91	6.96	21.7	16.42
Individual Patients - One Group	8.53	4.27	13.31	10.07
Individual Patients - Two Groups	6.26	3.13	9.77	7.39
Physical Therapists Required:			46%	10%
Overall Setting	16.24	8.12	14.94	3.27
School Setting	13.91	6.96	12.80	2.80
Speech Pathologists Required:			36%	
Overall Setting	6.54	3.27	4.71	N/A
School Setting	5.61	2.81	4.04	N/A
Audiologists Required:			48%	
Overall Setting	2.80	1.40	2.68	N/A
School Setting	3.36	1.68	3.23	N/A

AUGSBERG EFMD

Alternative C. EMFD Estimate of Fully Operational Patient Load and National Professional Statistics

EFMD Estimate = 10% of Total Population
Results identical to Alternative B.

AUGSBERG EFMD

Alternative D: Projective Estimate and National Professional Statistics
Projective Estimate = Current Patient Load and New Referrals/Month x 8 Months
100 + 32 x 8 = 356

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	8.60	4.3	13.41	10.15
Individual Patients - One Group	5.27	2.64	8.23	6.22
Individual Patients - Two Groups	3.87	1.94	6.04	4.57
Physical Therapists Required:			46%	10%
Overall Setting	10.33	5.17	2.03	9.24
School Setting	8.60	4.3	1.74	7.91
Speech Pathologists Required:			36%	
Overall Setting	4.01	2.02	2.90	N/A
School Setting	3.47	1.74	2.50	N/A
Audiologists Required:			48%	
Overall Setting	1.73	.86	1.66	N/A
School Setting	2.08	1.04	1.99	N/A

Bad Cannstatt EFMD

1. Schools responsible for:

   Boeblingen E.

   Goeppingen E/JH

   Lugwigsburg M

   Lugwigsburg E

   Heilbronn E/JH

   Nellingen E

   Patch H

   Schwaebisch - Gauend E

   Schwaebisch - Hall E

   Stuttgard E/JH

   Stuttgard H

2. Total school age population: 7007
   Total school age plus 0 - 5 population: 8759

3. Male/Female ratio for IEP's

   59%/41%

4. Total number of related services required on IEP's = 181

5. Total number of IEP's = 645

BAD CANNSTATT EFMD

Alternative A IEP's and National Professional Statistics
Total Number of IEP's = 645

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFM percentages
Occupational Therapists Required:			78%	59%
Individual Patients	15.59	7.80	24.30	18.38
Individual Patients - One Group	9.56	4.78	14.91	11.28
Individual Patients - Two Groups	7.02	3.51	10.94	8.27
Physical Therapists Required:			46%	10%
Overall Setting	18.19	9.21	14.33	3.67
School Setting	15.59	7.80	16.73	3.14
Speech Pathologists Required:			36%	
Overall Setting	7.34	3.67	5.28	N/A
School Setting	6.29	3.14	4.53	N/A
Audiologists Required:			48%	
Overall Setting	3.13	1.57	3.01	N/A
School Setting	3.76	1.88	3.62	N/A

BAD CANNSTATT EFMD

Alternative B Population Percentile (10%) and National Professional Statisti
Total Population 57.59 Ten Percent = 575.9

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EF percentages
Occupational Therapists Required:			78%	59%
Individual Patients	21.16	10.58	33.01	24.97
Individual Patients - One Group	12.98	6.49	20.24	15.31
Individual Patients - Two Groups	9.52	4.76	14.85	11.23
Physical Therapists Required:			46%	10%
Overall Setting	24.70	12.35	22.73	4.96
School Setting	21.16	10.58	19.46	4.25
Speech Pathologists Required:			36%	
Overall Setting	9.95	4.98	7.17	N/A
School Setting	8.54	4.27	6.15	N/A
Audiologists Required:			48%	
Overall Setting	4.25	2.13	4.08	N/A
School Setting	5.11	2.56	4.91	N/A

BAD CANNSTATT EFMD

Alternative C EFMD Estimate of Fully Operational Patient When Fully Operational and National Professional Statistics
EFMD Estimate 10% = Identical to Alternative B

BAD CANNSTATT

Alternative D Projective Estimate and National Professional Statistics
Projective Estimate = Current Patient Load + New Referrals/Mo x 8 months
130 + 20 x 8 mo. = 290

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	7.01	3.50	10.93	8.27
Individual Patients - One Group	4.30	2.15	6.70	5.07
Individual Patients - Two Groups	3.15	1.58	4.92	3.72
Physical Therapists Required:			46%	10%
Overall Setting	8.18	4.09	7.52	1.64
School Setting	7.01	3.50	6.44	1.40
Speech Pathologists Required:			36%	
Overall Setting	3.30	1.65	2.37	N/A
School Setting	2.83	1.41	2.04	N/A
Audiologists Required:			48%	
Overall Setting	1.41	.70	1.35	N/A
School Setting	1.69	.85	1.62	N/A

Berlin EFMD

1. Schools responsible for:

   Berlin E
   Berlin H
   International School

2. Total school age population: 1608
   Total school age plus 0 - 5 population: 2010

3. Male/Female ratio for IEP's

   56%/44%

4. Total number of related services required on IEP's = 17

5. Total number of IEP's = 79

BERLIN EFMD

Alternative A IEP's and National Professional Statistics
Total number of IEP's = 79

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	1.88	.94	2.98	2.25
Individual Patients - One Group	1.15	.58	1.83	1.38
Individual Patients - Two Groups	.85	.42	1.34	1.01
Physical Therapists Required:			46%	10%
Overall Setting	2.20	1.1	2.05	.45
School Setting	1.88	.94	1.76	.39
Speech Pathologists Required:			36%	
Overall Setting	.89	.44	.64	N/A
School Setting	.76	.38	.55	N/A
Audiologists Required:			48%	
Overall Setting	.38	.19	.36	N/A
School Setting	.46	.23	.44	N/A

BERLIN EFMD

Alternative B Population Percentile and National Professional Statistics
Ten Percent = 201

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	5.07	2.54	7.91	5.99
Individual Patients - One Group	3.11	1.56	4.85	3.67
Individual Patients - Two Groups	2.28	1.14	3.56	2.69
Physical Therapists Required:			46%	10%
Overall Setting	6.07	2.96	5.45	1.18
School Setting	5.07	2.54	4.67	1.01
Speech Pathologists Required:			36%	
Overall Setting	2.39	1.19	1.72	N/A
School Setting	2.05	1.02	1.47	N/A
Audiologists Required:			48%	
Overall Setting	1.02	.51	.98	N/A
School Setting	1.23	.61	1.18	N/A

BERLIN EFMD

Alternative C EFMD Estimate of Fully Operational Patient Load and National Professional Statistics
EFMD Estimate - 135

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	3.26	1.63	5.09	3.85
Individual Patients - One Group	2.00	1.00	3.12	2.36
Individual Patients - Two Groups	1.47	.73	2.29	1.73
Physical Therapists Required:			46%	10%
Overall Setting	3.81	1.91	3.50	.73
School Setting	3.26	1.63	3.00	.63
Speech Pathologists Required:			36%	
Overall Setting	1.53	.77	1.11	N/A
School Setting	1.32	.66	.95	N/A
Audiologists Required:			48%	
Overall Setting	.66	.33	.63	N/A
School Setting	.79	.39	.76	N/A

BERLIN EFMD

Alternative D Projected Estimate and National Professional Statistics

Projected Estimate Current Patient Load + New Referrals/Mo x 8

85 + (8x8) = 149

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	3.60	1.8	5.60	4.25
Individual Patients - One Group	2.21	1.1	3.44	2.61
Individual Patients - Two Groups	1.62	.81	2.53	1.91
Physical Therapists Required:			46%	10%
Overall Setting	4.2	2.1	3.87	.85
School Setting	3.6	1.8	3.31	.73
Speech Pathologists Required:			36%	
Overall Setting	1.69	.85	1.22	N/A
School Setting	1.45	.73	1.05	N/A
Audiologists Required:			48%	
Overall Setting	.72	36	69	N/A
School Setting	.87	.44	.84	N/A

BREMERHAVEN EFMD

1. Schools responsible for:

   Bremerhaven E
   Delmenhorst E
   Flensburg E
   Osterholz H
   Osterholz - Scharmbeck E
   Soegel E

2. Total school age population: 2046
   Total school age plus 0 - 5 population: 2558

3. Male/Female ratio for IEP's

   65%/35%

4. Total number of related services required on IEP = 3

5. Total number of IEP's = 132

BREMERHAVEN EFMD

Alternative A IEP'S and National Professional Statistics
Total Number of IEP's = 132

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	3.19	1.58	4.97	3.76
Individual Patients - One Group	1.96	.98	3.05	2.31
Individual Patients - Two Groups	1.43	.72	2.24	1.69
Physical Therapists Required:			46%	10%
Overall Setting	3.19	1.59	2.93	.63
School Setting	1.5	.75	1.08	.73
Speech Pathologists Required:			36%	
Overall Setting	2.7	.64	.93	N/A
School Setting	.64	.32	.62	N/A
Audiologists Required:			48%	
Overall Setting	1.54	.39	.74	N/A
School Setting	.87	.44	.84	N/A

BREMERHAVEN EFMD

Alternative B Population Percentile (10%) and National Professional Statistics
Ten Percent of Total Population = 255.8

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	6.1	3.09	9.64	7.29
Individual Patients - One Group	3.79	1.89	5.91	4.47
Individual Patients - Two Groups	2.78	1.39	4.34	3.28
Physical Therapists Required:			46%	10%
Overall Setting	7.21	3.61	6.64	1.44
School Setting	6.18	3.09	5.68	1.24
Speech Pathologists Required:			36%	
Overall Setting	2.91	1.45	2.09	N/A
School Setting	2.49	1.25	1.76	N/A
Audiologists Required:			48%	
Overall Setting	1.24	.62	1.19	N/A
School Setting	1.49	.75	1.43	N/A

BREMERHAVEN EFMD

Alternative C EFMD Estimate of Fully Operational Patient Load
National Professional Statistics
EFMD Estimate = 300

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	7.25	3.62	11.30	8.55
Individual Patients - One Group	4.44	2.22	6.93	5.24
Individual Patients - Two Groups	2.17	1.63	5.09	3.85
Physical Therapists Required:			46%	10%
Overall Setting	8.46	4.23	7.78	1.69
School Setting	7.25	3.62	6.67	1.45
Speech Pathologists Required:			36%	
Overall Setting	3.41	1.71	2.46	N/A
School Setting	2.92	1.46	2.11	N/A
Audiologists Required:			48%	
Overall Setting	1.46	.73	1.40	N/A
School Setting	1.75	.88	1.68	N/A

BREMERHAVEN EFMD

Alternative D Projected Estimate and National Professional Statistics
Projected Estimate = Current Patients + New Referrals/Mo x 8 Mo.
250 + (4x8) = 282

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	6.81	3.41	10.63	8.04
Individual Patients - One Group	4.18	2.09	6.52	4.93
Individual Patients - Two Groups	3.07	1.53	4.78	6.13
Physical Therapists Required:			46%	10%
Overall Setting	7.95	3.98	7.32	1.59
School Setting	6.81	3.41	6.27	1.36
Speech Pathologists Required:			36%	
Overall Setting	3.21	1.60	2.31	N/A
School Setting	2.75	1.37	1.98	N/A
Audiologists Required:			48%	
Overall Setting	1.37	.68	1.31	N/A
School Setting	1.65	.82	1.58	N/A

FRANKFURT EFMD

1. Schools responsible for:

Argonner E
Aschaffenburg E/JH
Babenhausen E
Bad Nauheim E
Bonn E
Bonn H
Bueren E
Darmstadt E
Darmstadt M
Frankfurt E
Frankfurt JH
Frankfurt H
Fulda E/H
Gieseen E
Gelnhausen E
Hanau H
Bad Hersfeld E
Butzbach E
Hainerberg E
Hemer
Herbornseelbach
Hessisch Oldendorf E
Kalkar E
Kerpen E
Jever E
Mainz E
Muenster E
Rheinberg E
Rhein Main E
Rhein Main JH
Sportsfield E
Wiesbaden M
Wiesbaden H
Aukann E
Dexheim E
Moenchengladbach E

2. Total school age population: 21,498
   Total school age plus 0 - 5 population: 26,873

3. Male/Female ratio for IEP's

   62%/38%

4. Total numer of related service required on IEP's = 360

5. Total number of IEP's = 1335

FRANKFURT EFMD

Alternative A Population Percentage and National Professional Statistics
Total number of IEP's = 1358

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	32.73	16.36	51.06	38.62
Individual Patients - One Group	20.07	10.04	31.32	23.69
Individual Patients - Two Groups	14.73	7.36	22.98	17.38
Physical Therapists Required:			46%	10%
Overall Setting	38.21	19.11	7.64	35.15
School Setting	32.73	16.36	6.55	30.11
Speech Pathologists Required:			36%	
Overall Setting	15.4	7.70	11.09	N/A
School Setting	13.21	6.60	9.51	N/A
Audiologists Required:			48%	
Overall Setting	6.58	3.29	6.31	N/A
School Setting	7.91	3.95	7.59	N/A

FRANKFURT EFMD

Alternative B IEP's and National Professional Statistics
Ten Percent of the Total Population = 2687.3

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	64.91	32.46	101.26	76.60
Individual Patients - One Group	39.81	19.91	62.11	46.98
Individual Patients - Two Groups	29.21	14.61	45.57	34.47
Physical Therapists Required:			46%	10%
Overall Setting	75.78	37.89	69.72	15.17
School Setting	64.91	32.46	59.72	13.00
Speech Pathologists Required:			36%	
Overall Setting	30.54	15.27	21.99	N/A
School Setting	26.19	13.10	18.86	N/A
Audiologists Required:			48%	
Overall Setting	13.05	6.52	12.52	N/A
School Setting	15.68	7.84	15.05	N/A

FRANKFURT EFMD

Alternative C EFMD Estimate of Fully Operational Patient
Load and National Professional Statistics
EFMD Estimate = 10% of the Total Population, Same as B

FRANKFURT EFMD

Alternative D Projected Estimate and National Professional Statistics
Projected Estimate Current Patient Load + New Referrals/Mo x 8
300 + (350x8) = 3100

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	74.88	37.44	116.81	88.36
Individual Patients - One Group	45.93	22.96	71.64	54.19
Individual Patients - Two Groups	33.70	16.85	52.57	39.76
Physical Therapists Required:			46%	10%
Overall Setting	87.42	43.71	17.48	80.43
School Setting	74.88	37.44	14.98	68.89
Speech Pathologists Required:			36%	
Overall Setting	35.23	17.61	25.36	N/A
School Setting	30.21	15.11	21.75	N/A
Audiologists Required:			48%	
Overall Setting	15.05	7.52	14.45	N/A
School Setting	18.09	9.04	17.36	N/A

HEIDELBURG EFMD

1. Schools responsible for:

   Heidelberg #1 E
   Heidelberg #2 E
   Heidelberg M
   Heidelberg H
   Karlsruhe E
   Kalsruhe H
   Mannheim E
   Mannheim M
   Mannheim H
   Ruelzheim H
   Worms E
   Pforzheim E

2. Total school age population: 8449
   Total school age plus 0 - 5 population: 10,561

3. Male/Female ratio for IEP's

   69%/31%

4. Total number of related service required on IEP's = 88

5. Total number of IEP's = 538

HEIDELBERG EFMD

Alternative A IEP's and National Professional Statistics
Total number of IEP's = 538

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	13.00	6.50	20.27	15.33
Individual Patients - One Group	7.97	3.99	12.43	9.41
Individual Patients - Two Groups	5.85	2.92	9.12	6.9
Physical Therapists Required:			46%	10%
Overall Setting	15.17	7.59	13.95	3.03
School Setting	13.00	6.50	11.96	2.60
Speech Pathologists Required:			36%	
Overall Setting	6.11	3.06	4.40	N/A
School Setting	5.24	2.62	3.38	N/A
Audiologists Required:			48%	
Overall Setting	2.61	1.31	2.51	N/A
School Setting	3.14	1.57	3.01	N/A

HEIDELBERG EFMD

Alternative B Population Percentage and National Professional Statistics
Ten Percent of the Total Population = 1056.1

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	25.51	12.75	39.80	30.10
Individual Patients - One Group	16.65	7.82	24.41	18.46
Individual Patients - Two Groups	11.48	5.74	17.91	13.55
Physical Therapists Required:			46%	10%
Overall Setting	27.78	14.89	27.40	5.96
School Setting	25.51	12.75	23.47	5.10
Speech Pathologists Required:			36%	
Overall Setting	12.00	6.00	8.64	N/A
School Setting	10.29	5.15	7.41	N/A
Audiologists Required:			48%	
Overall Setting	5.13	2.56	4.92	N/A
School Setting	6.16	3.08	5.92	N/A

HEIDELBERG EFMD

Alternative C EFMD Estimate of Fully Operational Patient Load and National Professional Statistics
EFMD Estimate = 700

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	16.91	8.45	26.38	19.95
Individual Patients - One Group	10.37	5.19	16.18	12.24
Individual Patients - Two Groups	7.09	3.80	11.87	8.98
Physical Therapists Required:			46%	10%
Overall Setting	19.74	9.87	18.16	3.95
School Setting	16.91	8.45	15.56	3.38
Speech Pathologists Required:			36%	
Overall Setting	7.96	3.98	5.73	N/A
School Setting	6.82	3.41	4.91	N/A
Audiologists Required:			48%	
Overall Setting	3.40	1.70	3.26	N/A
School Setting	4.08	2.04	3.92	N/A

HEIDELBERG EFMD

Alternative D Projected Estimate and National Professional Statistics
Projected Estimate Current Patient Load + New Referrals/Mo x 8
210 + (57.68 X8) = 671.44

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	16.22	8.11	25.24	19.14
Individual Patients - One Group	9.95	4.97	15.52	11.74
Individual Patients - Two Groups	7.30	3.65	11.39	8.61
Physical Therapists Required:			46%	10%
Overall Setting	18.94	9.47	11.97	2.22
School Setting	16.22	8.11	10.25	2.59
Speech Pathologists Required:			36%	
Overall Setting	7.63	3.82	3.78	N/A
School Setting	6.54	3.27	3.24	N/A
Audiologists Required:			48%	
Overall Setting	3.26	1.63	2.15	N/A
School Setting	3.92	1.96	2.59	N/A

LANDSTUHL EFMD

1. Schools responsible for:

Vogelweh E
Kaiserslautern H
Ramstein H
Kaiserslautern H
Ramstein JH
Bad Kreuznach E
Idar Oberstein E
Kaiserslautern E
Landstuhl E/M
Ramstein E
Sembach E
Spangdahlen E
Trier E
Baumholder E
Zweibrucken H
Sembach JH
Pirmasens E/JH
Kreutzberg E
Neubruecke E
Bitburg H
Beuchel E
Preum E
Bad Kreuznach HS
Hahn HS
Hahn E
Weierhof E

1. Total school age population: 20,880
Total school age plus 0 - 5 population = 26,100

2.. Male/Female ratio for IEP's

68%/32%

4. Total numer of related service required on IEP's = 295

5. Total number of IEP's = 896

LANDSTUHL EFMD

Alternative A IEP's and National Professional Statistics
Total number of IEP's = 896

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	21.64	10.80	33.76	25.54
Individual Patients - One Group	13.27	6.64	20.71	15.66
Individual Patients - Two Groups	9.74	4.87	15.19	11.49
Physical Therapists Required:			46%	10%
Overall Setting	25.27	12.63	23.25	5.08
School Setting	21.64	10.80	19.91	4.35
Speech Pathologists Required:			36%	
Overall Setting	10.18	5.09	7.33	N/A
School Setting	8.73	4.37	6.29	N/A
Audiologists Required:			48%	
Overall Setting	4.35	2.18	4.18	N/A
School Setting	5.23	2.61	5.02	N/A

LANDSTUHL EFMD

Alternative B Population Percentage and National Professional Statistics
Ten Percent of the Total Population = 2610.0

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	63.04	31.52	98.35	73.39
Individual Patients - One Group	38.67	19.33	60.32	45.63
Individual Patients - Two Groups	28.37	14.19	44.26	33.48
Physical Therapists Required:			46%	10%
Overall Setting	73.60	36.80	67.72	14.72
School Setting	63.04	31.52	58	12.61
Speech Pathologists Required:			36%	
Overall Setting	29.66	14.83	21.36	N/A
School Setting	25.44	12.72	18.32	N/A
Audiologists Required:			48%	
Overall Setting	12.67	6.34	12.16	N/A
School Setting	15.23	7.61	14.62	N/A

LANDSTUHL EFMD

Alternative C EFMD Estimate of Fully Operational Patient Load and National Professional Statistics
EFMD Estimate = 700

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	16.91	8.45	26.38	19.95
Individual Patients - One Group	10.37	5.19	16.18	12.24
Individual Patients - Two Groups	7.09	3.80	11.87	8.98
Physical Therapists Required:			46%	10%
Overall Setting	19.74	9.87	18.16	3.95
School Setting	16.91	8.45	15.56	3.38
Speech Pathologists Required:			36%	
Overall Setting	7.96	3.98	5.73	N/A
School Setting	6.82	3.41	4.91	N/A
Audiologists Required:			48%	
Overall Setting	3.40	1.70	3.26	N/A
School Setting	4.08	2.04	3.92	N/A

LANDSTUHL EFMD

Alternative D Projected Estimate and National Professional Statistics
Projected Estimate Current Patient Load + New Referrals/Mo x 8
277 + (38 x 8) = 589

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	14.23	7.11	22.19	16.79
Individual Patients - One Group	8.73	4.37	13.61	10.30
Individual Patients - Two Groups	6.40	3.20	9.99	7.56
Physical Therapists Required:			46%	10%
Overall Setting	16.61	8.31	15.28	3.33
School Setting	14.23	7.11	13.09	2.85
Speech Pathologists Required:			36%	
Overall Setting	6.69	3.35	4.82	N/A
School Setting	5.74	2.87	4.13	N/A
Audiologists Required:			48%	
Overall Setting	2.86	1.43	2.74	N/A
School Setting	3.44	1.72	3.30	N/A

NUERNBERG EFMD

1. Schools responsible for:

   Amberg E
   Ansbach E
   Bindlach E
   Crailsheim E
   Erlangen E
   Grafenwoehr E
   Hohenfel E
   Illesheim E
   Kattlersbach E
   Nuernberg E
   Nuernberg H
   Johann Kalb E
   Regensburg E
   Vilsech E/H
   Bamberg E
   Bamberg H
   Stullendorf E

2. Total school age population: 9174
   Total school age plus 0 - 5 population: 11,468

3. Male/Female ratio for IEP's

   61%/39%

4. Total numer of related service required on IEP's = 150

5. Total numbe rof IEP's = 772

NUERNBURG EFMD

Alternative A IEP's and National Professional Statistics
Total number of IEP's = 772

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	18.65	9.32	22.69	22.00
Individual Patients - One Group	11.44	5.72	13.92	13.50
Individual Patients - Two Groups	8.39	4.2	10.21	9.90
Physical Therapists Required:			46%	10%
Overall Setting	21.77	10.89	20.03	4.34
School Setting	18.65	9.32	17.16	3.72
Speech Pathologists Required:			36%	
Overall Setting	8.77	4.39	6.32	N/A
School Setting	7.52	3.76	5.42	N/A
Audiologists Required:			48%	
Overall Setting	3.75	1.87	3.60	N/A
School Setting	4.50	2.25	4.32	N/A

NUERNBERG EFMD

Alternative B Population Percentage and National Professional Statistics
Ten Percent of the Total Population = 1146

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	27.68	13.85	43.21	32.69
Individual Patients - One Group	16.98	8.50	26.50	20.05
Individual Patients - Two Groups	12.46	6.23	19.45	14.71
Physical Therapists Required:				
Overall Setting	32.32	16.17	29.75	6.47
School Setting	27.68	13.85	25.48	5.54
Speech Pathologists Required:			36%	
Overall Setting	13.03	6.52	9.38	N/A
School Setting	11.17	5.59	8.05	N/A
Audiologists Required:			48%	
Overall Setting	5.57	2.78	5.34	N/A
School Setting	6.69	3.35	6.42	N/A

NUERNBERG EFMD

Alternative C EFMD Estimate of Fully Operational Patient
Load and National Professional Statistics
Ten Percent of the Total Population, same as Alternative B

NUERNBERG EFMD

Alternative D Projected Estimate and National Professional Statistics
Projected Estimate Current Patient Load + New Referrals/Mo x 8
270 + (60 new/mo x8) = 750

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	18.12	9.06	28.26	21.38
Individual Patients - One Group	11.11	5.56	17.33	13.11
Individual Patients - Two Groups	8.15	4.08	12.72	9.62
Physical Therapists Required:			46%	10%
Overall Setting	21.15	10.58	19.46	4.23
School Setting	18.12	9.06	16.67	3.62
Speech Pathologists Required:			36%	
Overall Setting	8.52	4.25	6.14	N/A
School Setting	7.31	3.66	5.26	N/A
Audiologists Required:			48%	
Overall Setting	3.64	1.81	3.50	N/A
School Setting	4.38	2.19	4.20	N/A

WUERZBURG EFMD

1. Schools responsible for:

   Wildflecken E
   Schweinfurt E
   Schweinfurt JH
   Wuerzburg E
   Wuerzburg H
   Kitzigen E/JH
   Bad Kissigen E
   Wertheim E

2. Total school age population: 5557
   Total school age plus 0 - 5 population: 6,946

3. Male/Female ratio for IEP's

   64%/36%

4. Total numer of related service required on IEP's = 60

5. Total numbe rof IEP's = 411

WUERZBERG EFMD

Alternative A IEP's and National Professional Statistics
Total number of IEP's = 411

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	9.93	4.96	15.49	11.71
Individual Patients - One Group	6.09	3.04	9.50	7.18
Individual Patients - Two Groups	4.47	2.23	7.0	5.27
Physical Therapists Required:			46%	10%
Overall Setting	11.59	5.80	10.66	2.32
School Setting	9.93	4.96	9.13	1.99
Speech Pathologists Required:			36%	
Overall Setting	4.67	2.34	3.50	N/A
School Setting	4.01	2.00	2.90	N/A
Audiologists Required:			48%	
Overall Setting	1.99	1.0	1.92	N/A
School Setting	2.40	1.2	2.30	N/A

WUERZBERG EFMD

Alternative B Population Percentages and National Professional Statistics
Ten Percent of the Total Population = 694.6

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	16.78	8.39	26.17	19.80
Individual Patients - One Group	10.29	5.15	16.05	12.14
Individual Patients - Two Groups	7.55	3.78	11.78	8.91
Physical Therapists Required:			46%	10%
Overall Setting	19.59	9.79	18.02	3.89
School Setting	16.78	8.39	15.44	3.33
Speech Pathologists Required:			36%	
Overall Setting	7.89	3.95	5.68	N/A
School Setting	6.77	3.38	4.87	N/A
Audiologists Required:			48%	
Overall Setting	3.37	1.69	3.24	N/A
School Setting	4.05	2.03	3.89	N/A

WUERZBERG EFMD

Alternative C EFMD Estimate = 10% of population = same as B

Alternative D Projected Estimate and National Professional Statistics
Projected Estimate Current Patient Load + New Referrals/Mo x 8
198 + (20 new/mo x8) = 358

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	8.65	4.32	13.49	10.21
Individual Patients - One Group	5.30	2.65	8.27	6.26
Individual Patients - Two Groups	3.89	1.95	6.07	4.59
Physical Therapists Required:			46%	10%
Overall Setting	10.10	5.05	9.29	2.03
School Setting	8.65	4.32	7.96	1.74
Speech Pathologists Required:			36%	
Overall Setting	4.07	2.03	2.93	N/A
School Setting	3.49	1.75	2.51	N/A
Audiologists Required:			48%	
Overall Setting	1.74	.87	1.67	N/A
School Setting	2.09	1.04	2.01	N/A

SHAPE EFMD

1. Schools responsible for:

   Shape E
   Afcent E M
   Brussels American E/H
   Uden E
   Sozsterberg E/H
   Kleine Brogel E
   Geilenkirchen E

2. Total school age population: 3331
   Total school age plus 0 - 5 population: 4164

3. Male/Female ratio for IEP's

4. Total number of related service required on IEP's =

5. Total number of IEP's = no information available

SHAPE EFMD

Alternative A Total IEP's: Information Unavailable

SHAPE EFMD

Alternative B Population Percentage and National Professional Statistics
Ten Percent of the Total Population = 416.4

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	10.61	5.03	15.68	11.87
Individual Patients - One Group	6.17	3.08	9.61	7.28
Individual Patients - Two Groups	4.53	2.26	7.05	5.34
Physical Therapists Required:			46%	10%
Overall Setting	11.74	5.87	10.80	2.37
School Setting	10.06	5.03	9.25	2.03
Speech Pathologists Required:			36%	
Overall Setting	4.73	2.37	3.41	N/A
School Setting	4.06	2.03	2.92	N/A
Audiologists Required:			48%	
Overall Setting	2.02	1.01	1.94	N/A
School Setting	2.42	1.21	2.33	N/A

SHAPE EFMD

Alternative C EFMD Estimate of Fully Operational Patient Load and National Professional Statistics
EFMD Estimate = 300

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	7.25	3.62	11.30	8.55
Individual Patients - One Group	4.44	2.22	6.93	5.24
Individual Patients - Two Groups	3.26	1.6	5.09	3.85
Physical Therapists Required:			46%	10%
Overall Setting	8.46	4.23	7.78	1.69
School Setting	7.25	3.62	6.67	1.45
Speech Pathologists Required:			36%	
Overall Setting	3.41	1.71	2.46	N/A
School Setting	2.92	1.46	2.11	N/A
Audiologists Required:			48%	
Overall Setting	1.46	.73	1.40	N/A
School Setting	1.75	.88	1.68	N/A

SHAPE EFMD

Alternative D Projected Estimate and National Professional Statistics
Projected Estimate Current Patient Load + New Referrals/Mo x 8
30 + (22 new/mo X8) = 206

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	4.98	2.49	7.76	5.87
Individual Patients - One Group	3.05	1.53	4.76	3.60
Individual Patients - Two Groups	2.24	1.12	3.49	2.64
Physical Therapists Required:			46%	10%
Overall Setting	5.80	2.90	5.35	1.13
School Setting	4.98	2.49	4.58	.96
Speech Pathologists Required:			36%	
Overall Setting	2.34	1.17	1.69	N/A
School Setting	2.00	1.00	1.45	N/A
Audiologists Required:			48%	
Overall Setting	1.00	.50	.96	N/A
School Setting	1.20	.60	1.15	N/A

VINCENZA EMD

1. Schools responsible for:

   Vincenza E/H
   Verona E
   Livorno E
   Aviano E/H
   Rimini E

2. Total school age population: 2523
   Total school age plus 0 - 5 population: 3785

3. Male/Female ratio for IEP's

4. Total number of related service required on IEP's =

5. Total number of IEP's = no information available

VINCENZA EMID

Alternative A Total Number of IEP's - information unavailable

VINCENZA EFMD

Alternative B Ten Percent and National Professional Statistics
Ten Percent of the Total Population = 379

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	9.15	4.58	14.28	10.8
Individual Patients - One Group	5.61	2.81	8.76	6.63
Individual Patients - Two Groups	4.12	2.06	6.43	4.86
Physical Therapists Required:			46%	10%
Overall Setting	10.67	5.33	9.82	2.13
School Setting	9.15	4.58	8.42	1.83
Speech Pathologists Required:			36%	
Overall Setting	4.31	2.15	3.1	N/A
School Setting	3.69	1.85	2.66	N/A
Audiologists Required:			48%	
Overall Setting	1.84	.92	1.77	N/A
School Setting	2.21	1.10	2.12	N/A

VINCENZA EFMD

Alternative C EFMD Estimate 10% of Total Population = same as B

VICENZA EFMD

Alternative D Projected Estimate and National Professional Statistics
Projected Estimate Current Patient Load + New Referrals/Mo x 8
26 + (32 new/mo x8) = 282

Allied Health Professions	1/2 of the children with IEP's need services	1/4 of the children with IEP's need services	Frankfurt EFMD percentages	Landstuhl EFMD percentages
Occupational Therapists Required:			78%	59%
Individual Patients	6.81	3.41	10.63	8.04
Individual Patients - One Group	4.18	2.09	6.52	4.93
Individual Patients - Two Groups	3.07	1.53	4.78	6.13
Physical Therapists Required:			46%	10%
Overall Setting	7.95	3.98	7.32	1.59
School Setting	6.81	3.41	6.27	1.36
Speech Pathologists Required:			36%	
Overall Setting	3.2	1.60	2.31	N/A
School Setting	2.75	1.37	1.98	N/A
Audiologists Required:			48%	
Overall Setting	1.37	.68	1.31	N/A
School Setting	16.5	.82	1.58	N/A

APPENDIX N

OPTIMAL FEASIBLE SOLUTION
OCCUPATIONAL THERAPY TREATMENT REGIME

OCCUPATION THERAPY

Treatment Regime Evaluation

Alternative I: Individual Patients
Alternative II: Individual Patients and One Group
Alternative III: Individual Patients and Two Groups

Criteria:

a. Ease of accomplishment (i.e. the ease of arranging and conducting the regime)

b. Applicability to the Exceptional Family Member Program

c. Quality of care for patients

d. Cost effectiveness

Criteria	Alternative I	II	III
Ease of accomplishment - 5	5 x 8	5 x 6	5 x 3
Applicable to EFMD - 4	4 x 9	4 x 7	4 x 4
Quality of Care - 9	9 x 9	9 x 8	9 x 6
Cost Effective - 6	6 x 5	6 x 7	6 x 9
Total	187	172	139
Scale	1	2	3

Risks:

a. Long waiting lists (i.e. patient needing care and unable to receive care)

b. Inability to appropriately match patients for groups

c. Unable to obtain sufficient staffing

	Alternatives					
	A		B		C	
Risks	Prob.	Serious	Prob.	Serious	Prob.	Serious
Waiting List	90%	9	75%	6	50%	4
Groups	0%	0	65%	4	95%	8
Staffing	90%	8	50%	5	40%	5
Total	15.3		10.1		11.6	
Scale	3		1		2	

APPENDIX O

Subsystem Evaluation
National Professional Statistics
All Settings versus School Settings
Optimal Feasible Solution

Subsystem Evaluation

Alternative I — Use of national professional standards for the number of different patients seen per month in all settings.

Alternative II — Use of national professional standards for the number of different patients seen per month in school settings.

Criteria	A	B
Applicable to EPMP - 6	6 x 6	6 x 8
Accurate - 5	5 x 7	5 x 8
Predictive Validity 6	6 x 7	6 x 8
Total	113	136
Scale	2	1

Risks: Inability to obtain sufficient staffing - long waiting lists

Risks	A		B	
	Prob.	Serious	Prob.	Serious
Staffing	80%	8	60%	7
Waiting Lists	75%	7	60%	5
Total	11.65		7.2	
Scale	2		1	

APPENDIX P

Subsystem Evaluation
Percentage of EFMD Patients Seen By Each Allied Health Service

Statistics to be used to identify the percentage of EFMD patients to be seen by each allied health service.

Alternative I — One half of the EFMD patients will be seen by each allied health service.

Alternative II — One fourth of the EFMD patients will be seen by each allied health service.

Alternative III — Frankfurt EFMD percentages for each allied health service.

Alternative IV — Landstuhl EFMD percentages for each allied health service.

Alternative V — The average of Frankfurt and Landstuhl percentages for each allied health service.

Criteria	I	II	III	IV	V
Statistics available - 4	4 x 10	4 x 10	4 x 8	4 x 1	4 x 1
Sound Data Base - 8	8 x 1	8 x 1	8 x 6	8 x 6	8 x 8
Applicable to EFMD's - 7	7 x 4	7 x 4	7 x 7	7 x 6	7 x 8
Predictive Validity - 6	6 x 3	6 x 3	6 x 6	6 x 6	6 x 7
Total	94	94	141	130	166
Scale	4	4	2	3	1

Risks *	I		II		III		IV		V	
	Pr.	Sr.	Pr.	Sr.	Pr.	Sr.	Pr.	Sr.	Pr.	Sr.
Inaccurate Data	85%	8	85%	6	50%	7	65%	7	50%	7
Insufficient Staffing	70%	7	70%	8	85%	7	75%	7	75%	7
Skewed Data	50%	6	80%	4	40%	7	50%	7	35%	6
Total	17.2		13.9		12.95		13.30		10.85	
Scale	5		4		2		3		1	

*Pr = Problem
Sr = Serious

APPENDIX Q

Market Analysis Alternative versus Initial Population Estimate

ALTERNATIVE A
versus
Initial Population Estimates

	A	Initial Estimates	Comparative Ratio
Augsberg EFMD			
OT	7.97	1	7.97 : 1
PT	7.67	1	7.67 : 1
SP	2.42	1	2.42 : 1
Aud	1.93	0	1.93 : 0
Bad Connstatt EFMD			
OT	14.91	2	7.45 : 1
PT	16.73	2	8.36 : 1
SP	4.53	1	4.53 : 1
Aud	3.62	1	3.62 : 1
Berlin EFMD			
OT	1.83	1	1.83 : 1
PT	1.76	1	1.76 : 1
SP	.55	1	.55 : 1
Aud	.44	0	.44 : 0
Bremerhaven EFMD			
OT	3.05	1	3.05 : 1
PT	2.93	1	2.93 : 1
SP	.93	1	.93 : 1
Aud	.74	0	.74 : 0
Frankfurt EFMD			
OT	31.32	6	5.22 : 1
PT	6.55	7	.93 : 1
SP	9.51	1	9.51 : 1
Aud	7.59	1	7.59 : 1

Alternative A
versus
Initial Population Estimates

	A	Initial Estimates	Comparative Ratio
Landstuhl EFMD			
OT	20.71	4	5.17 : 1
PT	19.91	4	4.98 : 1
SP	6.29	1	6.29 : 1
Aud	5.02	0	5.02 : 0
Nuernberg EFMD			
OT	13.92	2	6.96 : 1
PT	17.16	2	8.58 : 1
SP	5.42	2	2.71 : 1
Aud	4.32	1	4.32 : 1
Wuerzberg EFMD			
OT	9.50	1	9.50 : 1
PT	9.13	1	9.13 : 1
SP	2.90	1	2.90 : 1
Aud	2.30	0	2.30 : 0
Shape EFMD			
OT	Information		
PT	Unavailable		
SP			
Aud			
Vincenza EFMD			
OT	Information		
PT	Unavilable		
SP			
Aud			

Alternative B
versus
Initial Population Estimates

	B	Initial Estimates	Comparative Ratio
Augsberg EFMD			
OT	13.31	1	13.31 : 1
PT	12.80	1	12.80 : 1
SP	4.04	1	4.04 : 1
Aud	3.23	0	3.23 : 0
Bad Connstatt EFMD			
OT	20.24	2	10.21 : 1
PT	19.46	2	9.73 : 1
SP	6.15	1	6.15 : 1
Aud	4.91	1	4.91 : 1
Berlin EFMD			
OT	4.85	1	4.85 : 1
PT	4.67	1	4.67 : 1
SP	1.47	1	1.47 : 1
Aud	1.18	0	1.18 : 0
Bremerhaven EFMD			
OT	5.91	1	5.91 : 1
PT	5.68	1	5.68 : 1
SP	1.76	1	1.76 : 1
Aud	1.43	0	1.43 : 0
Frankfurt EFMD			
OT	62.11	6	10.35 : 1
PT	59.72	7	8.53 : 1
SP	18.86	1	18.86 : 1
Aud	15.05	1	15.05 : 1
Heidelberg EFMD			
OT	24.41	2	12.20 : 1
PT	23.47	2	11.73 : 1
SP	7.41	1	7.41 : 1
Aud	5.92	1	5.92 : 1

Alternative B
versus
Initial Population Estimates

	B	Initial Estimates	Comparative Ratio
Landstuhl EFMD			
OT	60.32	4	15.0 : 1
PT	58.00	4	14.5 : 1
SP	18.32	1	18.32 : 1
Aud	14.62	0	14.62 : 0
Nuernberg EFMD			
OT	26.50	2	13.25 : 1
PT	25.48	2	12.74 : 1
SP	8.05	2	4.03 : 1
Aud	6.42	1	3.21 : 1
Wuerzberg EFMD			
OT	16.05	1	16.05 : 1
PT	15.44	1	15.44 : 1
SP	4.87	1	4.87 : 1
Aud	3.89	0	3.89 : 0
Shape EFMD			
OT	9.61	1	9.61 : 1
PT	9.25	1	9.25 : 1
SP	2.92	1	2.92 : 1
Aud	2.33	1	2.33 : 1
Vincenza EFMD			
OT	9.89	1	9.89 : 1
PT	9.51	1	9.51 : 1
SP	3.0	1	3.0 : 1
Aud	2.4	0	2.4 : 1

Alternative C
versus
Initial Population Estimates

	C	Initial Estimates	Comparative Ratio
Augsberg EFMD			
OT	13.31	1	13.31 : 1
PT	12.80	1	12.80 : 1
SP	4.04	1	4.04 : 1
Aud	3.23	0	3.23 : 0
Bad Connstatt EFMD			
OT	20.24	2	10.21 : 1
PT	19.46	2	9.73 : 1
SP	6.15	1	6.15 : 1
Aud	4.91	1	4.91 : 1
Berlin EFMD			
OT	3.12	1	3.12 : 1
PT	3.0	1	3.0 : 1
SP	.95	1	.95 : 1
Aud	.76	0	.76 : 1
Bremerhaven EFMD			
OT	6.93	1	6.93 : 1
PT	6.67	1	6.67 : 1
SP	2.11	1	2.11 : 1
Aud	1.68	0	1.68 : 0
Frankfurt EFMD			
OT	62.11	6	10.35 : 1
PT	59.72	7	8.53 : 1
SP	18.86	1	18.86 : 1
Aud	15.05	1	15.05 : 1
Heidelberg EFMD			
OT	16.18	2	8.09 : 1
PT	15.56	2	7.78 : 1
SP	4.91	1	4.91 : 1
Aud	3.92	1	3.92 : 1
Landstuhl EFMD			
OT	16.18	4	4.04 : 1
PT	15.56	4	3.89 : 1
SP	4.93	1	4.93 : 1
Aud	3.92	0	3.92 : 0

Alternative C
versus
Initial Population Estimates

	C	Initial Estimates	Comparative Ratio
Nuernberg EFMD			
OT	26.50	2	13.25 : 1
PT	25.48	2	12.74 : 1
SP	8.05	2	4.03 : 1
Aud	6.42	1	3.21 : 1
Wuerzberg EFMD			
OT	16.05	1	16.05 : 1
PT	15.44	1	15.44 : 1
SP	4.87	1	4.87 : 1
Aud	3.89	0	3.89 : 0
Shape EFMD			
OT	6.93	1	6.93 : 1
PT	6.67	1	6.67 : 1
SP	2.11	1	2.11 : 1
Aud	1.68	1	1.68 : 1
Vincenza EFMD			
OT	9.89	1	9.89 : 1
PT	9.51	1	9.51 : 1
SP	3.0	1	3.0 : 1
Aud	2.4	0	2.4 : 0

Alternative D
versus
Initial Population Estimates

	D	Initial Estimates	Comparative Patio
Augsberg EFMD			
OT	8.23	1	8.23 : 1
PT	1.74	1	1.74 : 1
SP	2.50	1	2.50 : 1
Aud	1.99	0	1.99 : 0
Bad Cannstatt EFMD			
OT	6.70	2	3.35 : 1
PT	6.44	2	3.22 : 1
SP	2.04	1	2.04 : 1
Aud	1.62	1	1.62 : 1
Berlin EFMD			
OT	3.44	1	3.44 : 1
PT	3.31	1	3.31 : 1
SP	1.05	1	1.05 : 1
Aud	.84	0	.84 : 0
Bremerhaven EFMD			
OT	6.52	1	6.52 : 1
PT	6.27	1	6.27 : 1
SP	1.98	1	1.98 : 1
Aud	1.58	0	1.58 : 0
Frankfurt EFMD			
OT	71.64	6	11.94 : 1
PT	14.98	7	2.14 : 1
SP	21.75	1	21.75 : 1
Aud	17.36	1	17.36 : 1
Heidelberg EFMD			
OT	15.52	2	7.76 : 1
PT	10.25	2	5.12 : 1
SP	3.24	1	3.24 : 1
Aud	2.59	1	2.59 : 1

Alternative D
versus
Initial Population Estimates

	D	Initial Estimates	Comparative Ratio
Landstuhl EFMD			
OT	13.61	4	3.41 : 1
PT	13.09	4	3.27 : 1
SP	4.13	1	4.13 : 1
Aud	3.30	0	3.30 : 0
Nuernberg EFMD			
OT	17.33	2	8.66 : 1
PT	16.67	2	8.33 : 1
SP	5.26	2	2.63 : 1
Aud	4.20	1	4.20 : 1
Wuerzberg EFMD			
OT	8.27	1	8.27 : 1
PT	7.96	1	7.96 : 1
SP	2.51	1	2.51 : 1
Aud	2.01	0	2.01 : 1
Shape EFMD			
OT	4.76	1	4.76 : 1
PT	4.58	1	4.58 : 1
SP	1.45	1	1.45 : 1
Aud	1.15	1	1.15 : 1
Vincenza EFMD			
OT	6.52	1	6.52 : 1
PT	6.27	1	6.27 : 1
SP	1.98	1	1.98 : 1
Aud	1.58	0	1.58 : 0

APPENDIX R

Market Analysis Techniques versus Initial Population Based Estimates

Optimal Feasible Solution

ALTERNATIVES

Alternative A:

IEP's and National Professional Statistics

Alternative B:

Population Percentile (10%) and National Professional Statistics

Alternative C:

EFMD Estimate of Fully Operational Patient Load and National Professional Statistics

Alternative D:

Projective Estimate and National Professional Statistics

Alternative E:

Initial Population Based Estimates

MARKET ANALSYIS TECHNIQUES VERSUS INITIAL POPULATION BASED ESTIMATES

Churchman - Ackoff Technique for Decision Making

	Initial Personnel Assignment				
Criteria	Alt. E	Alt. A	Alt. B	Alt. C	Alt. D
Ease of Accomplishment - 3	3 x 10	3 x 8	3 x 10	3 x 7	3 x 8
Statistics readily Available - 3	3 x 2	3 x 9	3 x 8	3 x 7	3 x 8
Data is accurate - 8	8 x 1	8 x 7	8 x 5	8 x 5	8 x 3
Applicable to EFMD - 7	7 x 6	7 x 8	7 x 7	7 x 8	7 x 7
Little or No Responder Bias - 4	4 x 6	4 x 4	4 x 10	4 x 4	4 x 8
Respondent Total	110	179	183	154	157
Scale	5	2	1	4	3

MARKET ANALSYIS TECHNIQUES VERSUS INITIAL POPULATION BASED ESTIMATES

Churchman - Ackoff Technique for Decision Making

Risks	Initial Procedure		Alt. A		Alt. B		Atl. C		Alt. D	
No Predictive Validity	99%	8	75%	7	70%	8	65%	6	75%	6
Insufficient Staffing	5%	9	90%	5	95%	4	85%	5	90%	4
Skewed Results	85%	8	80%	8	75%	7	70%	6	85%	5
Cost	60%	4	86%	8	90%	8	80%	7	78%	7
Total	17.57		23.03		21.85		17.95		17.81	
Scale	1		5		4		3		2	

Risks: - No Predictive Validity
- Unable to Obtain Sufficient Staffing
- Skewed Results
- High Financial Cost

APPENDIX S

The Optimal Combination
(for each alternative)

Alternative A

	A	Initial Estimates	Comparative Ratio
Augsberg EFMD			
OT	7.01	1	7.01 : 1
PT	4.83	1	4.83 : 1
SP	2.42	1	2.42 : 1
AUD	1.93	0	1.93 : 1
Bad Cannstatt			
OT	13.11	2	6.55 : 1
PT	9.04	2	4.52 : 1
SP	4.53	1	4.53 : 1
AUD	3.62	1	3.62 : 1
Berlin			
OT	1.61	1	1.61 : 1
PT	1.11	1	1.11 : 1
SP	.55	1	.55 : 1
AUD	.44	0	.44 : 1
Bremerhaven			
OT	2.68	1	2.68 : 1
PT	1.85	1	1.85 : 1
SP	.93	1	.93 : 1
AUD	.74	0	.74 : 0
Frankfurt			
OT	27.60	6	13.80 : 1
PT	19.03	7	9.51 : 1
SP	9.51	7	9.51 : 1
AUD	7.59	1	7.59 : 1
Heidelberg			
OT	10.94	2	5.47 : 1
PT	7.54	2	3.77 : 1
SP	3.38	1	3.38 : 1
AUD	3.01	1	3.01 : 1
Landstuhl			
OT	18.21	4	4.55 : 1
PT	12.55	4	3.14 : 1
SP	6.29	1	6.29 : 1
AUD	5.02	1	5.02 : 1

Alternative A

	A	Initial Estimates	Comparative Ratio
Nuernberg			
OT	15.69	2	7.85 : 1
PT	10.82	2	5.41 : 1
SP	5.42	2	2.71 : 1
AUD	4.32	1	4.32 : 1
Wuerzberg			
OT	8.37	1	8.37 : 1
PT	5.76	1	5.76 : 1
SP	2.9	1	2.90 : 1
AUD	2.3	0	2.30 : 0
Shape			
OT	Information		
PT	Unavailable		
SP			
AUD			
Vincenza			
OT	Information		
PT	Unavailable		
SP			
AUD			

Alternative B

	B	Initial Estimates	Comparative Ratio
Augsberg			
OT	11.71	1	11.71 : 1
PT	8.07	1	8.07 : 1
SP	2.42	1	2.42 : 1
AUD	1.93	0	2.86 : 1
Bad Cannstatt			
OT	11.71	2	5.85 : 1
PT	8.07	2	4.03 : 1
SP	4.53	1	4.53 : 1
AUD	3.62	1	3.62 : 1
Berlin			
OT	4.09	1	4.09 : 1
PT	2.82	1	2.82 : 1
SP	.55	1	.55 : 1
AUD	.44	0	.88 : 1
Bremerhaven			
OT	5.20	1	5.20 : 1
PT	3.58	1	3.58 : 1
SP	.93	1	.93 : 1
AUD	.74	0	1.48 : 1
Frankfurt			
OT	54.62	6	9.10 : 1
PT	37.65	7	5.38 : 1
SP	9.51	1	9.51 : 1
AUD	7.59	1	7.59 : 1
Heidelberg			
OT	21.47	2	10.73 : 1
PT	14.80	2	7.40 : 1
SP	3.38	1	3.38 : 1
AUD	3.01	1	3.01 : 1
Landstuhl			
OT	53.05	4	14.26 : 1
PT	36.57	4	9.14 : 1
SP	6.29	1	6.29 : 1
AUD	5.02	0	10.04 : 1

Alternative B

	B	Initial Estimates	Comparative Ratio
Nuernberg			
OT	23.31	2	11.65 : 1
PT	16.07	2	8.03 : 1
SP	5.42	2	2.71 : 1
AUD	4.32	1	4.32 : 1
Wuerzberg			
OT	14.12	1	14.12 : 1
PT	9.73	1	9.73 : 1
SP	2.9	1	2.90 : 1
AUD	2.3	1	2.30 : 1
Shape			
OT	8.46	1	8.46 : 1
PT	5.83	1	5.83 : 1
SP	2.92	1	2.92 : 1
AUD	2.33	1	2.33 : 1
Vincenza			
OT	8.70	1	8.70 : 1
PT	6.0	1	6.0 : 1
SP	3.0	1	3.0 : 1
AUD	2.4	0	4.8 : 1

Alternative C

	C	Initial Estimates	Comparative Ratio
Augsberg			
OT	11.71	1	11.71 : 1
PT	8.07	1	8.07 : 1
SP	2.42	1	2.42 : 1
AUD	1.93	0	1.93 : 0
Bad Cannstatt			
OT	11.71	2	5.85 : 1
PT	8.07	2	4.03 : 1
SP	4.53	1	4.53 : 1
AUD	3.62	1	3.62 : 1
Berlin			
OT	2.74	1	2.74 : 1
PT	1.89	1	1.89 : 1
SP	.55	1	.55 : 1
AUD	.44	0	.44 : 0
Bremerhaven			
OT	6.10	1	6.10 : 1
PT	4.20	1	4.20 : 1
SP	.93	1	.93 : 1
AUD	.74	0	.74 : 0
Frankfurt			
OT	54.62	6	9.10 : 1
PT	37.65	7	5.38 : 1
SP	9.51	1	9.51 : 1
AUD	7.59	1	7.59 : 1
Heidelberg			
OT	14.23	2	7.11 : 1
PT	9.81	2	4.90 : 1
SP	3.38	1	3.38 : 1
AUD	3.01	1	3.01 : 1
Landstuhl			
OT	14.23	4	3.55 : 1
PT	9.81	4	2.45 : 1
SP	6.29	1	6.29 : 1
AUD	5.02	1	5.02 : 1

Alternative C

	C	Initial Estimates	Comparative Ratio
Nuernberg			
OT	23.31	2	11.65 : 1
PT	16.07	2	8.03 : 1
SP	5.42	2	2.71 : 1
AUD	4.32	1	4.32 : 1
Wuerzberg			
OT	14.12	1	14.12 : 1
PT	9.73	1	9.73 : 1
SP	2.9	1	2.90 : 1
AUD	2.3	0	2.3 : 0
Shape			
OT	6.10	1	6.1 : 1
PT	4.20	1	4.2 : 1
SP	2.11	1	2.1 : 1
AUD	1.68	1	1.68 : 1
Vincenza			
OT	8.70	1	8.7 : 1
PT	6.0	1	6.0 : 1
SP	3.0	1	3.0 : 1
AUD	2.4	0	2.4 : 0

Alternative D

	D	Initial Estimates	Comparative Ratio
Augsberg			
OT	7.24	1	7.24 : 1
PT	4.99	1	4.99 : 1
SP	2.42	1	2.42 : 1
AUD	1.93	0	1.93 : 0
Bad Cannstatt			
OT	5.9	2	2.85 : 1
PT	4.06	2	2.03 : 1
SP	4.53	1	4.53 : 1
AUD	3.62	1	3.62 : 1
Berlin			
OT	3.03	1	3.03 : 1
PT	2.09	1	2.09 : 1
SP	.55	1	.55 : 1
AUD	.44	0	.44 : 0
Bremerhaven			
OT	5.73	1	5.73 : 1
PT	3.95	1	3.95 : 1
SP	.93	1	.93 : 1
AUD	.74	0	.74 : 0
Frankfurt			
OT	63.01	6	10.50 : 1
PT	43.43	7	6.20 : 1
SP	9.51	1	9.51 : 1
AUD	7.59	1	7.59 : 1
Heidelberg			
OT	13.65	2	6.87 : 1
PT	22.25	2	11.12 : 1
SP	3.38	1	3.38 : 1
AUD	3.01	1	3.01 : 1
Landstuhl			
OT	11.97	4	2.99 : 1
PT	8.25	4	2.06 : 1
SP	6.29	1	6.29 : 1
AUD	5.02	0	5.02 : 0

Alternative D

	D	Initial Estimates	Comparative Ratio
Nuernberg			
OT	15.24	2	7.62 : 1
PT	10.51	2	5.75 : 1
SP	5.42	2	2.71 : 1
AUD	4.32	1	4.32 : 1
Wuerzberg			
OT	7.28	1	7.28 : 1
PT	5.02	1	5.02 : 1
SP	2.9	1	2.9 : 1
AUD	2.3	0	2.3 : 0
Shape			
OT	4.18	1	4.18 : 1
PT	2.89	1	2.89 : 1
SP	2.11	1	2.11 : 1
AUD	1.68	1	1.68 : 1
Vincenza			
OT	5.73	1	5.73 : 1
PT	3.95	1	3.75 : 1
SP	3.0	1	3.0 : 1
AUD	2.4	0	2.4 : 0

FOOTNOTES

1 The Education for All Handicapped Children Act of 1975, P.L. 94-142; 20 U.S.C. 1401 et. seq: Federal Register 42(163): 42474-42518, August 23, 1977.

2 Ballard, Jeffery and Fethel, Jeffery, "Public Law 94-142 and Section 504: What They Say About Rights and Protections," Exceptional Children, (November 1977): p. 178.

3 20 U.S.C. 1401 (1).

4 Judity Palfrey, Richard Mervis and John Butles, "New Directions in the Evaluation and Education of Handicapped Children, " The New England Journal of Medicine, 298, 15 (April 1978): 819.

5 1975 United States Code: Congressional and Administrative News. 94th Congress, First Session, Vol. 2, 1975, 1425-1508.

6 W. Gellman, "Attitudes Toward the Rehabilitation of the Disabled," American Journal of Occupational Therapy, 14 (February 1960): 188

7 Patricia Fizgibbons and Peggy Ferry, "It's the Law, Mandatory Public Education for Handicapped Children," American Journal of Disabled Children, 133 (May 1979) 476.

8 Ibid.

9 20 U.S.C. 1401 (3,c).

10 20 U.S.C. 1401 (4, 17).

11 Evelyn Deno, "The Cascade System of Special Education Service,"Carolyn Del Polito, Project Director, Alliances in Advocacy for Disabled Children and Youth: Resource Manual, developed for the Allied Health Child-Fund and Advocacy Project through U.S. Department of Education, Office of Special Education and Rehabilitative Services. Grant #G008001409, 1981.

12 DoD Directive 1342.12 "Education of Handicapped Children in the DoD Dependents Schools, " December 1981, (E-2),3

13 Memorandum for the Surgeon General, "Provision of Health Related Services to Handicapped Dependent Children - Decision Memorandum, " May 1982, 2(n).

14 Information Paper: SUBJECT: Provision fo Related Services to Handicapped Dependents, DASG-PTB, 22 March, 1982.

15 Memorandum from COL James G. Van Straten, MSC, Chief of Staff, 7th MEDCOM, 10 August 1983.

16 Memorandum from Major General Quinn H. Becker, MC, Chief Surgeon, 7th MEDCOM, 29 July 1983.

17 Ibid.

18 Philip Kotter, Marketing Management,(New Jersey, Prentice-Hall, Inc., 1976) 495.

19 DoD Directive 1342.12, enclosure 2.

20 Jorge Strabsteine, "Georgraphic Distribution of Military Dependent Children: Mental Health Resources Needed," Military Medicine, 148 (February 1983) 127.

21 Richard Ireland, "Using Marketing Strategies to Put Hospitals on Target," Hospitals, 51 (June 1, 1977) 55.

22 David Fein, "Survey Report: 1982 ASHA Omnibus." American Speech - Hearing Association Journal (March 1983) 53-57.

23 Ibid.

24 Ibid.

25 "Active Member Profile - 1982". The American Physical Therapy Association, 1156 15th Street N.W., Washington, D.C. 20005, 1982.

26 Ibid.

27 The American Occupational Therapy Association, Inc., Division of Research Information, 1383 Piccard Avenue, Rockville, Maryland, 20850.

28 Department of Commerce, Bureau of Census, Current Population Reports, Series P-25, No. 875, January 1980.

29 Graduate Medical Education National Advisory Committee Report, 1981.

30 Office of Special Education Programs, Department of Education, 1981.

31 Morris Green, Pediatric Diagnosis (London, W.B. Saunders Company, 1980) 400.

32 Ibid.

33 Pat Patterson, Interview. Chief, Social Work Service, Exceptional Family Member Department, Heidelberg, Germany, April 1984.

34 Ibid.

35 Abraham Rudolph, Pediatrics 17th Edition,(Connecticut, Appleton - Century - Crofts Inc., 1982) 65.

36 Lewis Barnes, Advances in Pediatrics, Vol, 23,(Chicago, Year Book Medical Publishers, Inc., 1976) 117.

37 Dave Kuhn, Interview.Exceptional Family Member Consultant Team Member, Seventh Medical Command, Heidelberg, Germany, April 1984.

SELECTED BIBLIOGRAPHY

Books

Barness, Lewis. Advances in Pediatrics, Chicago: Year Book Medical Publishers, Inc., 1976.

Dillman, Don, Mail and Telephone Surveys, New York: John Wiley and Sons, 1978.

Green, Morris. Pediatric Diagnosis, London: W.B. Saunders Company, 1980.

House, Ernest. Evaluating with Validity, London: Sage Publications, 1980.

Isaac, Stephen and Michael, William. Handbook in Research and Evaluation, California: Edits Publishers, 1983.

Jonas, Steven. Health Care Delivery in the United States, New York: Springer Publishing Company, 1981.

Kotler, Philip. Marketing Management, New Jersey: Prentice-Hall Inc., 1976.

Mac Stravic, Robin. Marketing by Objectives for Hospitals, England: Aspen Systems Corporation, 1980.

Rubright, Robert and Mac Donald, Dan. Marketing Health and Human Services, England: Aspen Systems Corporation 1981.

Rudolph, Abraham. Pediatrics, 17th Edition, Connecticut, Appleton-Century-Crofts Company, 1982.

Periodicals

Abidin, Richard and Seltzer, Jerrery, "Special Education Outcomes: Implications for Implementation of Public Law 94-142." Journal of Learning Disabilities, 14, No 1 (January 1981): 28-31.

American Hospital Association, "Health Specialists Guide to the Federal Legislative Process of Federal Program and Regulation Development", American Journal of Law and Medicine, 3, No 2, 209-19.

Ballard, Joseph and Zettel, Jeffery, "Public Law 94-142 and Section 504: What They Say About Rights and Protections." Exceptional Children,(November 1977): 177-84.

Ballard, Joseph and Zettel, Jeffery. "Fiscal Arrangments of Public Law 94-142." Exceptional Children,(June 1978): 333-37.

Ballard, Joseph and Zettel, Jeffery, "The Managerial Aspects of Public Law 94-142." Exceptional Children, (March 1978): 457-62.

Canarie J. "Maldistributed Health Care Services: Reconstructuring the Current Regulatory System." American Journal of Law and Medicine, 6, No 3, 407-23.

Cohen, Shirley, Semmes, Marilyn and Guralnich, Michael. "Public Law 94-142 and the Education of Preschool Handicapped Children." Exceptional Children (January 1979) 279-84.

Fitzgibbons, Patricia and Ferry, Peggy. "Its the Law." American Journal of Disabled Children, 133 (May 1979): 476-78.

Flathouse, Virgil. "Multiply Handicapped Deaf Children and Public Law 94-142." Exceptional Children (April 1979): 560-65.

Kinnealey, Maya and Morse, Ann. "Educational Mainstreaming of Physically Handicapped Children." American Journal of Occupational Therapy, 33, No 6 (June 1979): 365-73.

Karagianis, Leslie and Nesbit, Wayne. "The Warnock Report: Britain's Preliminary Answer to Public Law 94-142." Exceptional Children (February 1981): 332-36.

McCormick, Linda and Lee, Carolyn. "Public Law 94-142." American Journal of Occupational Therapy, 33, No 9, 586-89.

Nadler, Barbara, Merron, Myrna and Friedel, William. "Public Law 94-142: One Response to the Personnel Development Mandate." Exceptional Children (March 1981): 463-64.

Ottenbacher, Kenneth. "Occupational Therapy and Special Education: Some Issues and Concerns Related to Public Law 94-142." American Journal of Occupational Therapy, 36, No 2 (February 1982): 81-84.

Padula, William. "A Point of Discrimination - Public Law 94-142." Journal of Learning Disabilities, 12, No 10 (December 1979): 48-49.

Palfrey, Judith, Mervis, Richard and Butler, John. "New Directions in the Evaluation and Education of Handicapped Children." The New England Journal of Medicine (April 13, 1978): 819-24.

Strabstein, Jorge. "Geographic Distribution of Military Dependent Children: Mental Health Resources [illegible]." Military Medicine, 148 (February 1983): 127-32.

LEGAL CITATIONS

The Education for All Handicapped Children Act of 1975, P.L. 94-142: 20 U.S.C. 1401 et. seq: Federal Register 42(163): 42474-42518, August 23, 1977.

Defense Dependents Education Act of 1978, P.L. 95-561: 20 U.S.C. 921-932 et. seq: Federal Register, Supp. II, 1978.

Alliances in Advocacy for Disabled Children and Youth. Resource Manual, developed for the Allied Health Child-Find and Advocacy Project through U.S. Department of Education, Office of Special Education and Rehabilitative Services. Grant #G008001409, 1981.

DoD Directive 1342.6, "Department of Defense Dependents Schools, " October 17, 1978.

DoD Directive 1342.12, "Education of Handicapped Children in the DoD Dependents Schools, " December 17, 1981.

Cox, Jim, "The Needs Assessment: a Guide for School Level Activities," Downey, California, Office of the Los Angeles County Superintendent of Schools, July 1970.

Memorandum for Record to DASG-PS, OTSG Realted Services Task Force Meeting," submitted by COL Louis Carmona, 1 June 1981.

Information paper, "Provision of Health Related Services to Handicapped Dependents." DASG-PTB, 22 March 1982.

Ibid, 1 April 1982.

Memorandum for the Surgeon General, "Provision of Health Related Services to Handicapped Dependent Children - Decision Memorandum," May 1982.

Memorandum "Exceptional Family Member Program" submitted by COL James Van Straten, MSC, Chief of Staff, 7th MEDCOM, 10 August 1983.

Memorandum "Exceptional Family Member Program" submitted by Major General Quinn H. Becker, MC, Chief Surgeon, 7th MEDCOM, 29 July 1983.